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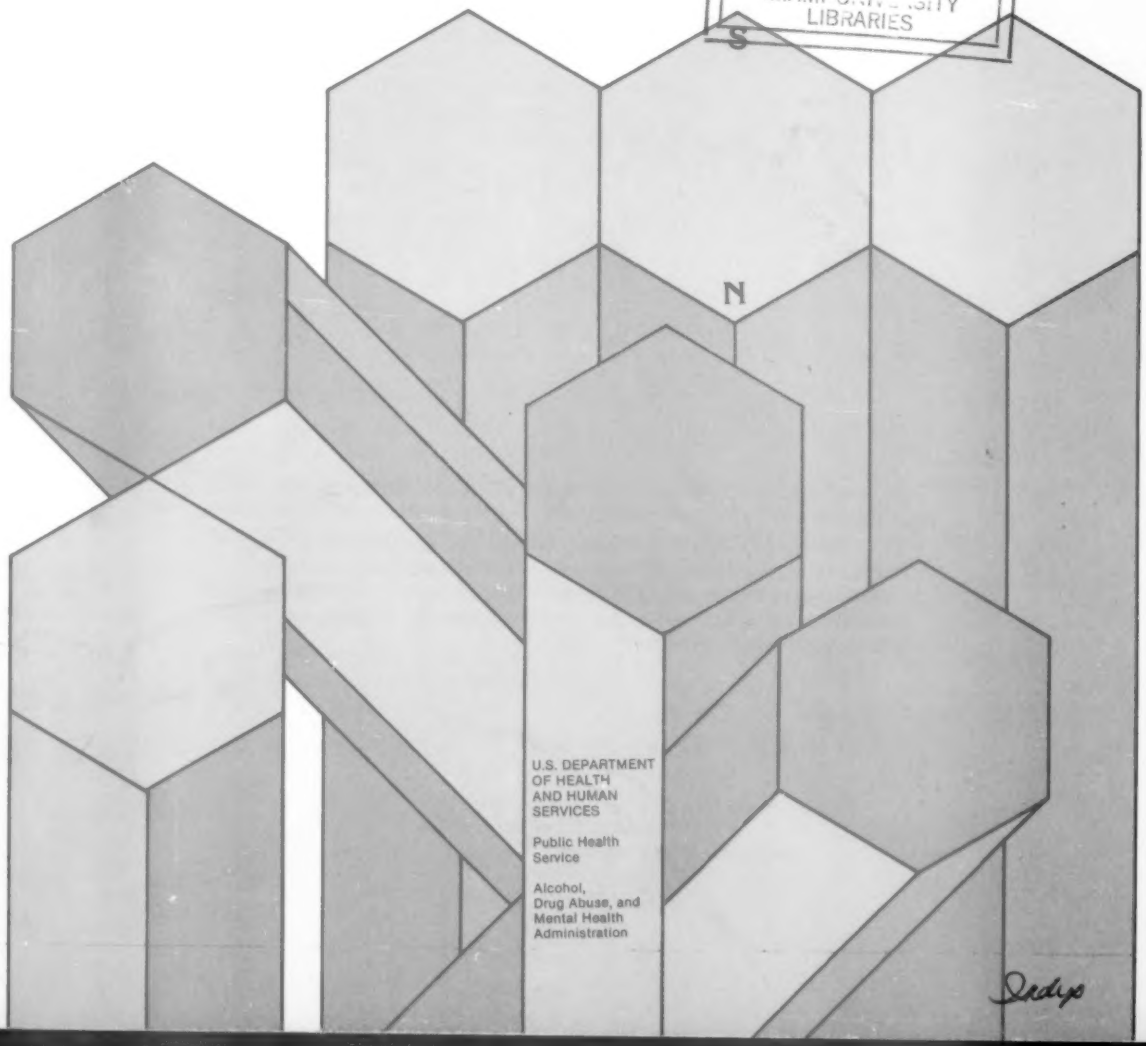
Psychopharmacology Abstracts


U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
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Carrie Lee Rothgeb, *Editor*
Bette L. Shannon, *Managing Editor*

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ABSTRACTS

PRECLINICAL PSYCHOPHARMACOLOGY

01 CHEMICAL SYNTHESIS, ISOLATION AND CHARACTERIZATION

000001 Cervena, Irena; Metysova, Jirina; Protiva, Miroslav. Research Institute for Pharmacy and Biochemistry, Kourimska 17, 13060 Prague 3, Czechoslovakia **Fluorinated analogues of the tricyclic neuroleptics: 2,3-difluoro derivative of clorothepin.** European Journal of Medicinal Chemistry. 15(4):330-332, 1980.

The synthesis and pharmacology of the following fluorinated derivates of the neuroleptic agent clorothepin are described: 2-fluoro, 3-fluoro, 6-fluoro, 7-fluoro and 3,7-difluoro derivates. 2-(4-chlorophenylthio)-4,5-difluorobenzyl alcohol was transformed via intermediates to an acid which was cyclized with polyphosphoric acid to 8-chloro-2,3-difluorodibenzo(bmf)-thiepin-10(11H)-one. Two further steps gave the chloride which underwent a substitution reaction with 1-methylpiperazine resulting in the title compound. This substance has a strong central depressant activity, but in the test of catalepsy its effect is weaker than those of the parent compounds. Both types of effects show some protraction. 11 references. (Author abstract modified)

000002 Datta, Narayandas; Mondal, Panchali; Pauling, Peter. Monda: William Ramsay, Ralph Forster, and Christopher Ingold Laboratories, University College London, Gower St., London WC1, England **The structure of haloperidol hydrobromide (4-(4-4-chlorophenyl)-4-hydroxypiperidion) 4'-fluorobutyrophenone HBr).** Acta Crystallography. B35:1486-1488, 1979.

The structure of haloperidol hydrobromide, (4-(4-4-chlorophenyl-4-hydroxypiperidino) 4'-fluorobutyrophenone HBr), was determined to investigate the analogies and differences among the three dimensional structures of these butyrophenone, psychotropic durgs. The flexibility of the conformational degrees of freedom of these substances was assessed. The final full matrix least squares refinement gave R=0.078. Though the unit cells differ, the observed conformation is very similar to that of the analogous substance R1616, but differs from those observed in the free bases. 5 references. (Author abstract modified)

000003 Datta, Narayandas; Mondal, Panchali; Pauling, Peter. Mondall: William Ramsay, Ralph Forster and Christopher Ingold Laboratories, University College London, Gower St, London WC1, England **The crystal and molecular structure of the acetylcholine antagonist (RS)-4-dimethylamino-2-butynyl 2-cyclohexyl-2-hydroxy-2-phenylacetate hydrochloride.** Acta Cryst allography. B35:1120-1123, 1979.

The structure of the acetylcholine antagonist, (RS)-4-dimethylamino-2-butynyl 2-cyclohexyl-2-hydroxy-2-phenylacetate hydrochloride (C20H28N03.Cl-) was determined by single crystal X-ray diffraction. Crystals are monoclinic, space group P21/c, with four formula units in a unit cell (Z=4) with dimensions a=17.164 (8), b=8.109 (4), c=14.541 (7) A and beta=91.81 (4) degrees. The structure was solved by direct methods and refined by full matrix least squares to a final R value of 0.071. The ester group is planar. The angle between the phenyl ring and the mean place of the cyclohexyl ring is 71 degrees. The phenyl group makes an angle of 66 degrees and the mean plane of the cyclohexyl group an angle of 79 degrees with the plane of the ester. 9 references. (Author abstract modified)

000004 Horn, A. S.; Dijkstra, D.; Feenstra, M. G. P.; Grol, C. J.; Rollema, H.; Westerink, B. H. C. Dept. of Pharmacy, University of Groningen, Groningen, The Netherlands **Prodrugs of some dopaminergic 2-aminotetralins: a review of their syntheses and neurochemical profiles.** European Journal of Medicinal Chemistry. 15(4):387-392, 1980.

The preparation of dibenzoyl ester prodrugs of the potent dopaminergic agonists 6,7-dihydroxy-2-aminotetralin (ADTN) and isoADTN led to a marked improvement of their passage through the blood-brain barrier resulting in stable drug levels over many hours. The syntheses of these prodrugs are reviewed together with details of the concentrations of ADTN and isoADTN in various brain areas after i.p. injections of the prodrugs. Their effects on dopamine metabolism and animal behavior are also discussed. In addition it has been shown that the levels of ADTN in the brain are to a large extent controlled by catechol O-methyltransferase. 50 references. (Author abstract modified)

000005 van der Zee, Peter; Koger, Hein S.; Gootjes, Johan; Hespe, Willem. Gist-Brocades N.V., Research and Development, P.O. Box 523, 2003 RM Haarlem, The Netherlands **Aryl 1,4-dialk(en)ylpiperazines as selective and very potent inhibitors of dopamine uptake.** European Journal of Medicinal Chemistry. 15(4)363-370, 1980.

Substituted 1-(2-(diphenylmethoxy)ethyl)piperazines were synthesized and tested for inhibitory activity on dopamine uptake by synaptosomal preparations of rat corpus striatum. Especially 4-(3-phenyl-2-prop(en)yl)substitution yielded very potent inhibitors with IC50 values of about 1 to 2 nM, activities that surpass that of benzotropine 100 times. Compared with other monoamine uptake processes, the effect on dopamine uptake was highly specific. QSAR analysis showed that substituents in the diphenylmethoxy group combining a strong inductive effect with a small volume provide optimal potency. In contrast, for those in the solitary phenyl group a combination of strong electron withdrawing effect and a small volume proved to be required. 13 references. (Author abstract modified)

000006 Wallace, Jacke E.; Schwertner, Harvey A.; Shimek, Eugene L., Jr. Dept. of Pathology, University of Texas Health Science Center at San Antonio, 7703 Floyd Curl Drive, San Antonio, TX 78284 **Analysis for diazepam and nordiazepam by electron-capture gas chromatography and by liquid chromatography.** Clinical Chemistry. 25(7):1296-1300, 1979.

Concurrent analysis for diazepam and nordiazepam in serum via electron capture gas chromatography or reversed phase high performance liquid chromatography is described. In the gas chromatographic analysis, the use of a new chemically deactivated stationary liquid phase, SP 2250-DB (Supelco, Inc.), resulted in improved chromatographic sensitivity and peak symmetry for the two benzodiazepines as compared to that obtained with either OV-17 or OV-1 phases. Steady-state concentrations of diazepam and nordiazepam in serum as determined by gas/liquid chromatography correlated closely with those found by liquid/liquid chromatography. 21 references. (Author abstract modified)

02 DRUG DEVELOPMENT (PRECLINICAL SCREENING)

000007 Ahmed, Maqbool; Burton, James S.; Hadgraft, Jonathan; Kellaway, Ian W. Kellaway: Welsh School of Pharmacy, UWIST, Cardiff, Wales **Partitioning and efflux of phenothiazines from liposomes.** Biochemical Pharmacology. 29(17):2361-2365, 1980.

The partitioning and efflux of eight phenothiazine derivatives from egg phosphatidylcholine liposomes was studied, and a

linear relationship between the equilibrium partition coefficient (K) and first-order efflux rate constant was derived. Higher coefficients were found for the phenothiazines partitioning into egg phosphatidylcholine compared with dipalmitoylphosphatidylcholine liposomes at 37 degrees. The concentration dependence of K for chlorpromazine was determined and found to increase at low concentrations, but to decrease above .00014M. The equilibrium partition coefficients of perphenazine were pH depndent, with maximum liposomal incorporation at pH values greater than the pKalpha of the base. The efflux of mequitazine was enhanced from liposomes containing cholesterol. Implications for drug absorption kinetics are considered. 26 references. (Author abstract modified)

000008 Andreyeva, N. I.; Mashkovskiy, M. D. Lab. farmakologii, VNIKhFI, Moscow, USSR /**A pharmacological study of the new Soviet antidepressant inkasan.**/ Farmakologicheskoye issledovaniye novogo otechestvennogo antidepressanta inkazana. Farmakologiya i Toksikologiya. 43(2):133-137, 1980.

A new Soviet antidepressant called inkasan which has been authorized for use in medical practice as an antidepressant was studied using mice, rats, cats and rabbits. A decrease in the depressive effects of reserpine and tetrabenazine was noted. Inkasan also made possible the central action of amphetamine, L-dihydroxyphenylalanine, and 5-oxytryptophan as well as the peripheral action of adrenaline and serotonin. Results show that inkasan, 3-methyl-8-methoxy-3H,1,2,5,6-tetrahydropyrazino (1,2,3-ab)-beta-carboline hydrochloride, possesses a number of pharmacological properties inherent in agents eliciting an antidepressant action, and that the antidepressant properties of inkasan have characteristics which are both similar to and different from the characteristics of tricyclic antidepressants. 4 references. (Journal abstract modified)

000009 Horisaka, Kazuyoshi; Watanabe, Kazuko. Dept. of Pharmacology, Kobe Women's College of Pharmacy, Kobe 658, Japan **Effect of intraventricular injections of alpha-aminosulfonic acids on the central nervous system of conscious mice.** Japanese Journal of Pharmacology. 29(5):814-816, 1979.

The behavioral effects of a series of aliphatic alpha-aminosulfonic acids were studied following intraventricular administration to male ddY mice. All amino acids tested induced dose-dependent convulsion. These convulsions were enhanced by 4-aminobutanesulfonic acid, 5-aminopentanesulfonic acid, 6-aminohexanesulfonic acid, 3-guanylaminopropanesulfonic acid, 3-guanylamino-2-hydroxypropanesulfonic acid, and homocysteic acid. Aminomethanesulfonic acid, 3-mono-methylamino-2-hydroxypropanesulfonic acid, and 3-trimethylamino-2-hydroxypropanesulfonic acid were inactive. A biphasic behavior pattern (initial hyperreactivity to external stimuli, followed by sedation) was observed after 3-amino-2-hydroxypropanesulfonic acid, 3-aminopropanesulfonic acid, or taurine. 8 references.

000010 Maksay, Gabor; Tegyey, Zsuzsanna; Kemeny, Vera; Lukovits, Istvan; Otvos, Laszlo; Palosi, Eva. Central Research Institute for Chemistry, Hungarian Academy of Sciences, Pusztaszeri ut 59-67, H-1025 Budapest, Hungary **Oxazepam esters. 1. Correlation between hydrolysis rates and brain appearance of oxazepam.** Journal of Medicinal Chemistry. 22(12):1436-1443, 1979.

To study the relation between the pharmacokinetics of oxazepam and the physiochemical properties of its prodrugs, 14C-labeled aliphatic and omega-phenyl-substituted esters were administered i.v. to mice. The esters had less effect than the parent compound on rotarod performance. Pharmacokinetic constants for the increase in oxazepam brain levels were correlated with the in vitro maximal hydrolysis rates of the esters. Oxazepam brain penetration was correlated with the steric constant of the esters. 49 references. (Author abstract modified)

000011 Maksay, Gabor; Tegyey, Zsuzsanna; Otvos, Laszlo. Central Research Institute for Chemistry, Hungarian Academy of Sciences, Pusztaszeri ut 59-67, H-1025 Budapest, Hungary **Oxazepam esters. 2. Correlation of hydrophobicity with serum binding, brain penetration, and excretion.** Journal of Medicinal Chemistry. 22(12):1443-1447, 1979.

Pharmacokinetics of a series of prodrug oxazepam esters were studied in male albino mice. The effect of hydrophobicity was studied in relation to serum binding, brain penetration, tissue storage, and excretion. Brain/blood partition of the esters did not vary with their serum binding. Brain/blood concentration ratios for oxazepam showed that hydrolysis precedes brain penetration and that hydrophobicity may influence the hydrolysis rate. The amount of tissue storage and total excretion rates also correlated with hydrophobicity. 26 references. (Author abstract modified)

000012 Masuda, Y.; Karasawa, T.; Shiraishi, Y.; Hori, M.; Yoshida, K.; Shimizu, M. Shimizu: Dept. of Pharmacology, Research Laboratories, Dainippon Pharmaceutical Co., Ltd. 33-94 Enoki-cho, Suita-shi, Osaka 564, Japan **3-Sulfamoylmethyl-1,2-benzisoxazole, a new type of anticonvulsant drug: pharmacological profile.** Arzneimittel-Forschung. 30(3):477-483, 1980.

The anticonvulsant properties and neurological toxic effects of 3-sulfamoylmethyl-1,2-benzisoxazole (AD-810) were compared with those of antiepileptic drugs, to determine the profile of the compound. AD-810 suppressed electrically and chemically-induced maximal seizures but did not prevent minimal seizures in experimental animals. In rats, rabbits, and dogs, the anticonvulsant activity of AD-810 against maximal electroshock seizures was more potent than those of diphenylhydantoin and carbamazepine. No tolerance developed to the anticonvulsant action of AD-810 by consecutive treatment. The compound showed much less neurotoxicity and lethal toxicity than the existing antiepileptic drugs for grand mal, and also showed the least hypnotic effect by itself or by combination with hexobarbital. AD-810 displayed a profile of anti-convulsant activity most similar to that of diphenylhydantoin or carbamazepine. 20 references (Author abstract modified)

000013 Merz, Herbert; Stockhaus, Klaus. Dept. of Medicinal Chemistry, C.H. Boehringer Sohn, D-6507 Ingelheim, Germany **N-((tetrahydrofuryl)alkyl) and N-(alkoxyalkyl) derivatives of (-)-normetazocine, compounds with differentiated opioid action profiles.** Journal of Medicinal Chemistry. 22(12):1475-1483, 1979.

A series of N-(alkoxyalkyl) derivatives of (-)-normetazocine were synthesized and evaluated for opiod properties and toxicity in NMRI mice. Analgesic activity was related to the position of the ether oxygen in the N-substituent, with maximum potency obtained when nitrogen and oxygen were linked by a 2 carbon chain. The action profile of compounds with such a chain was governed by the degree of branching of carbon C-2● in the beta position to the nitrogen; unbranched C-2● compounds were morphine-like agonists, whereas branched C-2● compounds were nonmorphine-like agonists or alorphine-like mice agonist/antagonists. 50 references. (Author bstract modified)

000014 Sackett, Patricia Holt; McCreery, Richard L. McCreery: Dept. of Chemistry, Ohio State University, Columbus, OH 43210 **Effect of structure on phenothiazine cation radical reactions in aqueous buffers.** Journal of Medicinal Chemistry. 22(12):1447-1453, 1979.

The reactions of cation radicals of 11 phenothiazine tranquilizers were examined in mildly acidic aqueous buffers. Those with an aminopropyl side chain in the 10 position reacted to form 50% sulfoxide and 50% phenothiazine; cation radicals with different side chains formed additional products believed to result from hydroxylation of the phenothiazine ring. Promazine, chlorpromazine, and trifluopromazine reacted with a mechanism involving nucleophilic attack of the radical by acetate or dihydrogen phosphate. An electron withdrawal group para to the sulfur increased the rate of reaction of the cation radical. It is hypothesized that the interaction of phenothiazine cation radicals with nucleophiles associated with receptor sites may be related to receptor binding. 20 references. (Author abstract modified)

000015 Schlosser, W.; Franco, S. Research Division, Hoffmann-LaRoche Inc., Nutley, NJ 07110 **Reduction of gamma-aminobutyric acid (GABA)-mediated transmission by a convulsant benzodiazepine.** Journal of Pharmacology and Experimental Therapeutics. 211(2):290-295, 1979.

The convulsant benzodiazepine Ro5-3663 (15mg/kg i.v.) depressed dorsal root potentials and abolished dorsal root reflexes evoked by muscle and cutaneous afferent inputs in spinal cats. The monosynaptic reflex was depressed, but polysynaptic potentials were enhanced. Diazepam antagonized these effects. R05-3663 also reduced the amplitude and duration of GABA evoked negative surface potential recorded from the superior cervical ganglion. 38 references. (Author abstract modified)

000016 Smith, Donald F. Central Laboratory, Psychiatric Hospital, DK-8240 Risskov, Denmark **Tranylcypromine stereoisomers, monoaminergic neurotransmission and behavior. A minireview.** Pharmakopsychiatrie Neuro-Psychopharmakologie. 13(3):130-136, 1980.

Studies on the effects of the d-stereoisomers and l-stereoisomers of tranylcypromine on locomotor activity, agressive behavior, hindlimb reflexes, head twitches, and behaviors produced by reserpine in rats are reviewed. The d-isomer is found to produce stereotypic behavior and head twitches, to enhance extensor hindlimb reflexes, and to alter effects of reserpine on locomotor activity. The l-isomer is shown to enhance vertical and horizontal locomotor activity and to cause aggressive behavior, but fails to influence hindlimb reflexes. Biochemical and pharmacological studies suggest that the d-isomer influences mainly tryptaminergic neurotransmission, while the l-isomer affects primarily catecholaminergic neurotransmission. It is concluded that tranylcypromine stereoisomers have stereoselective effects on behavior and monoaminergic neurotransmission. The implication of the findings for the notion that the antidepressant effects of tranylcypromine are due to inhibition of monoamine oxidase are briefly discussed. 45 references. (Author abstract)

03 MECHANISM OF ACTION: PHYSIOLOGICAL, BIOCHEMICAL AND PHARMACOLOGICAL

000017 Alam, A. S.; Imondi, A. R.; Udinsky, J.; Hagerman, L. M. Adria Laboratories, Inc., Research Park, P.O. Box 16529, Columbus, OH 43216 **Bioavailability of 14C-sulpiride in dogs.** Archives Internationales de Pharmacodynamie et de Therapie. 242(1):4-13, 1979.

The plasma and urinary concentrations of unchanged 14C-sulpiride were measured in the dog following i.v. and oral administration. Bioavailability of the oral hydrochloride solution was 85% and that of the free base suspension was 75%. Sulpiride equilibrated rapidly with tissue fluid and had an apparent volume of distribution of 3.3 to 3.8 l/kg. The plasma half-life was 2.5 to 3 hours. The short plasms half-life and its negligible concentrations in the brain were consistent with the low lipophilicity of sulpiride. When 100mg sulpiride was given orally either as hydrochloride or free base, the maximum plasma level was reached within one hour and concentrations were 2.3 and 1.8mcg/ml, respectively. The similarity of urinary excretion data from i.v. and oral preparations suggest minimal first pass effect. 13 references. (Author abstract)

000018 Amory, M. C.; Mainard, F.; Bousquet, B. Laboratoire de Biochimie, U.E.R. des Sciences Pharmaceutiques, F-44035 Nantes Cedex, France **Effects of phenothiazine derivatives and related compounds on tyrosine aminotransferase activity.** Communications in Psychopharmacology. 4(2):153-159, 1980.

The effect of various tricyclic compounds on the tyrosine aminotransferase system in the rat was examined. Intraperitoneal administration of phenothiazine derivatives and related compounds increased liver tyrosine aminotransferase activity. Maximal stimulation, which varied according to the compound, occurred 5 hours after injection. It was noted that a sulfur atom in the central ring enhanced enzyme activity and that the thioxanthene nucleus was more active than the phenothiazine nucleus. Some substituents increased the potency of these drugs. This action seemed to be an inductive effect. No stimulation of enzyme activity was observed after simultaneous administration of actinomycin D and a tricyclic derivative, and induction was not mediated by glucocorticoids, which are known to be inducers since stimulatory action has been observed in adrenalectomized rats after drug injection. Hydrocortisone and a tricyclic drug, when administered simultaneously, seemed to act via different pathways and produced an additive stimulation of enzyme activity. 13 references. (Author abstract)

000019 Arnold, Michael A.; Fernstrom, John D. Fernstrom: Dept. of Nutrition and Food Science, Room 56-137, Massachusetts Institute of Technology, Cambridge, MA 02139 **Administration of anti-somatostatin serum to rats reverses the inhibition of pulsatile growth hormone secretion produced by injection of metergoline but not yohimbine. (Unpublished paper).** Research Report, NIMH Grant MH-25857, 1979. 23 p.

The question of whether release of endogenous somatostatin (SS) in rats might mediate the apparent inhibition of growth hormone (GH) secretion produced by metergoline or yohimbine injection was examined. Plasma GH levels in adult male rats bearing chronic right atrial cannulae were measured at 15 minute intervals during a 4 hour period around the onset of the daily dark period. Plasma GH levels in control rats (vehicle injected) rose rapidly from low levels just before darkness to very high levels around the onset of the dark period, then declined to low values within 2 hours. Injection of the serotonin receptor antagonist metergoline or the adrenergic blocker yohimbine 2.25 hours before darkness significantly suppressed the subsequent rise in plasma GH levels. The effect of metergoline, but not yohimbine, on plasma GH markedly reversed when animals were injected intravenously with antisomatostatin serum 1 hour after drug administration. These data suggest that circulating SS may mediate the GH inhibition produced by injection of a serotonin receptor blocker, however, other factors are apparently involved in the suppression of GH secretion by yohimbine. 26 references. (Author abstract modified)

000020 Arnold, Michael A.; Fernstrom, John D. Fernstrom: Massachusetts Institute of Technology, Room 56-137, Cambridge, MA 02139 **L-tryptophan injection enhances pulsatile growth hormone secretion in the rat. (Unpublished paper).** Research Report, NIMH Grant MH-25857, 1979. 18 p.

The effect of injecting L-tryptophan or a serotonin receptor agonist (MK-212) on pulsatile growth hormone (GH) secretion was studied in male rats bearing right atrial cannulae. After in-

jection, blood samples were drawn at 15 minute intervals for periods up to 5 hours. L-trytophan administration significantly enhanced mean serum GH levels for several hours. Injection of another large neutral amino acid, L-valine, did not influence serum GH levels. However, when administered with tryptophan, valine blocked the tryptophan induced enhancement of GH secretion and blunted the increases in brain tryptophan and serotonin levels that normally accompany tryptophan injection. Injection of MK-212 elicited an immediate rise in serum GH levels; this effect was completely blocked by pretreatment with metergoline, a serotonin receptor antagonist. Taken together, these data support the notion that treatments which increase serotonin receptor stimulation enhance or induce pulsatile GH secretion. 20 references. (Author abstract modified)

000021 Audigier, Y.; Gout, R.; Mazarguil, H.; Cros, J. Laboratoire de Pharmacologie et de Toxicologie Fondamentales, CNRS, 205 route de Narbonne, F-31708 Toulouse Cedex, France **Comparative study of analgesia induced by N-Val5- and Pro5-enkephalin analogs.** European Journal of Pharmacology. 64(2/3):187-198, 1980.

The analgesic potency of N-Val5 analogs and Pro5 derivatives were compared in order to identify the mechanism of the unusually strong antinociceptive activity induced by Pro5 enkephalin analogs. Where N-Val5 and Pro5 compounds were equiactive in in vitro assays, N-Val5 derivatives were considerably less active analgesics than Pro5 analogs. Since N-Val is the homolog of Pro with an opened pyrrolidine ring, these data are taken to show that the cyclic structure of Pro participates in the strong in vivo activity of Pro5 analogs without altering the binding to the opiate receptor. It is suggested that proline confers metabolic stability to the corresponding pentapeptides and therefore enhances their biological activity. 10 references. (Author abstract modified)

000022 Badawy, A. A. -B.; Evans, M.; Punjani, N. F. South Glamorgan Health Authority, Addiction Unit Research Laboratory, Whitchurch Hospital, Cardiff CF4 7XB, Wales **Enhancement of rat brain metabolism of a tryptophan load by chronic ethanol administration.** British Journal of Pharmacology. 68(1):22-24, 1980.

The enhancement of rat brain metabolism of a tryptophan load by chronic ethanol administration is described. It is noted that previous results indicate that chronic ethanol administration enhances brain 5-hydroxytryptamine synthesis by increasing the availability of circulating tryptophan to the brain secondary to the decreased liver tryptophan pyrrolase activity. The effects of the tryptophan load on tryptophan concentration and that of brain 5-hydroxyindoleacetic acid (5-HIAA) are potentiated by the ethanol treatment. Results suggest that chronic ethanol administration alters the handling of tryptophan such that kynurenine metabolism is suppressed and that of serotonin is enhanced. It is suggested that tryptophan enhances ethanol preference by modifying brain serotonin synthesis. 10 references.

000023 Bannon, Michael J.; Grace, Anthony A.; Bunney, Benjamin S.; Roth, Robert H. Roth: Dept. of Pharmacology, Yale University School of Medicine, New Haven, CT 06510 **Evidence for an irreversible interaction of bromocryptine with central dopamine receptors.** Naunyn-Schmiedeberg's Archives of Pharmacology. 312(1):37-41, 1980.

Gamma-butyrolactone caused an increase in dopa accumulation in the male Sprague-Dawley rat striatum and olfactory tubercle which could be prevented by pretreatment with bromocriptine. The effect of bromocriptine was in turn prevented by pretreatment with ()-butaclamol. Studies of in vitro 3H-spiperone binding showed that the number of labeled dopamine receptors in the striatum was decreased by 30% 2 hours after bromocriptine, but not 30 minutes or 48 hours after bromocriptine. In extracellular single unit recording experiments, bromocriptine induced a depression of nigrostriatal dopamine cell firing which was reversed by haloperidol when the neuroleptic was given within 5 minutes of bromocriptine, but not when injected more than 20 minutes after bromocriptine. Results suggest that bromocriptine interacts in an irreversible fashion with central dopaminergic receptors. 23 references. (Author abstract modified)

000024 Baraban, Jay M.; Aghajanian, George K. Dept. of Psychiatry, Yale Unversity School of Medicine, New Haven, CT **Suppression of serotonergic neuronal firing by alpha-adrenoceptor antagonists: evidence against GABA mediation.** European Journal of Pharmacology. 66(4):287-294, 1980.

Microiontophoretic application of the alpha-adrenoceptor antagonists WB-4101 and phentolamine suppressed the firing of serotonergic (5-HT) cells in the dorsal raphe of male Sprague-Dawley rats. Iontophoretic application of the GABA antagonists picrotoxin and bicuculline did not alter the suppression induced by alpha-adrenoceptor blockade. Results do not support the proposal that GABA mediates the suppression of 5-HT cells by alpha-adrenoceptor antagonists. 32 references. (Author abstract modified)

000025 Bareis, Donna Lynn; Slotkin, Theodore A. Section on Pharmacology, Lab. of Clinical Science, NIMH, Bethesda, MD 20014 **Maturation of sympathetic neurotransmission in the rat heart. III. Developmental changes in reserpine inhibition of norepinephrine uptake into isolated synaptic vesicles.** Biochemical Pharmacology. 29(11):1595-1598, 1980.

Developmental changes in reserpine inhibition of norepinephrine (NE) uptake into isolated synaptic vesicles were investigated in the rat heart. The time required for recovery of cardiac vesicular NE uptake after giving reserpine to rats of different ages was measured, and results confirm that the ontogenetic increases in transmitter vesicular uptake sites are associated with accelerated arrival of new vesicles. The synthesis of new synaptic vesicles appears to be elevated compared to adult rats through the first 5 weeks of age. Synaptic vesicles prepared from rats from birth to 30 days of age were also less sensitive than adult vesicles to inhibition of NE uptake by reserpine in vitro, suggesting that properties of the uptake system may change during postnatal development. 20 references.

000026 Batzold, Frederick; DeHaven, Robert; Kuhar, Michael J.; Birdsall, Nigel. Kuhar: Dept. of Pharmacology and Experimental Therapeutics, Johns Hopkins University, School of Medicine, Baltimore, MD 21205 **Inhibition of high affinity choline uptake: structure activity studies.** Biochemical Pharmacology. 29(18):2413-2416, 1980.

Sodium dependent, high affinity choline uptake in brain synaptosome was inhibited by various choline analogues. When substituents were placed on the quaternary nitrogen, the compounds became weaker inhibitors as the bulk of the substituents increased. None of the compounds with changes in the hydroxyl group part, except for a bias-quaternary compound, were potent inhibitors. Increasing the oxygen/nitrogen distance resulted in a weaker inhibition. Data from crystallographic studies and inspection of Dreiding molecular models suggest an optimal oxygen/nitrogen distance of about 3.3A. These results support earlier suggestions that a hydroxyl group and a quaternary nitrogen are necessary for interaction with the carrier. 18 references. (Author abstract modified)

000027 Bergstrom, Lena; Terenius, Lars. Terenius: Box 573, S-751 23 Uppsala, Sweden **Enkephalin levels decrease in rat stria-**

tum during morphine abstinence. European Journal of Pharmacology. 60(4):349-352, 1979.

A radioimmunoassay was used to measure striatal enkephalin levels in male Sprague-Dawley rats during the withdrawal period following 11 days of morphine treatment. Enkephalin levels were not altered 2 hours after the last morphine injection, but a marked reduction was observed 24 hours after withdrawal. A slight decrease in striatal enkephalin was evident 48 hours after the last injection. No decrease in enkephalin levels was found 12 or 24 hours after a single 20mg/kg dose of morphine. 10 references. (Author abstract modified)

000028 Besson, J.-M.; Le Bars, D. I.N.S.E.R.M., 2, rue d'Alesia, F-75014 Paris, France /**The effects of morphine on the activity of certain dorsal horn neurons of the spinal cord involved in nociceptive processes.**/ Effets de la morphine sur l'activite de certains neurones de la corne dorsale de la moelle impliques dans les processus nociceptifs. Encephale. 5(3):205-213, 1979.

The effects of morphine on the function of certain neurons of the dorsal horn of the spinal cord, which play a role in the nociceptive processes, are discussed in the light of recent neurophysiological studies of the analgesic effects of morphine. Experiments with spinal preparation of cats after injection of morphine, decerebrated preparation, and intact animals are described. It is concluded that these electrophysiological and behavioral studies show the importance of spinal mechanisms in morphine analgesia. Results support recent findings related to the localization at the spinal level of opiate receptors and terminals rich in enkephalin and substance-P. 55 references.

000029 Blasig, J.; Bauerle, U.; Herz, A. Bauerle: Dept. of Neuropharmacology, Max-Planck-Institut fur Psychiatrie, Kraepelinstrasse 2, D-8000 Munich 40, Germany **Endorphin-induced hyperthermia: characterization of the exogenously and endogenously induced effects.** Naunyn-Schmiedeberg's Archives of Pharmacology. 309(2):137-143, 1979.

Endorphins increased the body temperature of male Sprague-Dawley rats when given in low doses, but decreased temperature at high doses. Both effects were antagonized by naloxone and attenuated in morphine tolerant and dependent animals. Like opiate-induced hyperthermia, the increase in temperature induced by endorphins was diminished in restrained animals. The hyperthermia induced by pyrogens was not reversed by naloxone or by restraint, and maintenance of normal body temperature during exposure to cold was not disturbed by naloxone. Results suggest that naloxone reversible hyperthermia may be a sensitive measure of endorphin release. 27 references. (Author abstract modified)

000030 Bohn, Martha C.; Lauder, Jean M. Dept. of Neurology, Cornell University Medical College, 515 East 71st St., New York, NY 10021 **Cerebellar granule cell genesis in the hydrocortisone-treated rat.** Developmental Neuroscience. 3(2):81-89, 1980.

Hydrocortisone treatment on postnatal days 7 to 18 resulted in a decreased number of cells in the external granular layer (EGL) and an early disappearance of the EGL in Long-Evans hooded rats. Examination of the adult cerebellum of the neonatally treated anmimals revealed a 41% decrease in the number of granule cells in lobule-VII and a 28% decrease in molecular layer microneurons. Peaks of cell formation in the internal granular and molecular layers occurred at earlier ages in hydrocortisone treated rats than in controls. In the granule cell population, this was due to decreased cell proliferation during treatment and premature cessation of division in granule cell precursors in the EGL. It is suggested that endogenous levels of thyroid and glucocorticoid hormones during the neonatal period may influence the rate of neurogenesis in the rat cerebellum. 45 references. (Author abstract modified)

000031 Breward, J.; House, C. R.; Smith, R. K. Dept. of Physiology, Royal (Dick) School of Veterinary Studies, University of Edinburgh, Edinburgh, Scotland **Alpha-flupenthixol: an antagonist of dopamine-evoked fluid secretion by an insect salivary gland preparation.** British Journal of Pharmacology. 69(1):123-129, 1980.

The inhibition of secretory responses of cockroach salivary glands to dopamine, adrenaline, and noradrenaline by alpha-flupenthixol is reported. The inhibition was slow in onset (60 min) and in reversal (greater than 2 h). Inhibition of responses to adrenaline and noradrenaline was noncompetitive, since the maxima and slopes of dose response curves of these agonists were reduced. Although at low concentrations the antagonism of responses to dopamine show some characteristics of competitive inhibition, at higher doses noncompetitive inhibition is clearly demonstrated. These results are explained in terms of different efficacies of the agonists for the receptors antagonized by alpha-flupenthixol. Beta-flupenthixol also was shown to antagonize responses to dopamine, but it was 10 to 100 times less potent than alpha-flupenthixol. 13 references. (Author abstract modified)

000032 Brewster, David; Rance, Michael J. Dept. of Drug Metabolism, Pharmaceutical Division, Reckitt and Colman, Dansom Lane, Hull, England **An analogue of thyrotropin releasing hormone with improved biological stability both in vitro and in vivo.** Biochemical Pharmacology. 29(19):2619-2623, 1980.

The metabolism of thyrotropin releasing homrone (TRH) and a trans-3-methyl-prolineamide analogue were studied both in vitro and in vivo using a rat model. The rates of degradation of the two tripeptides were compared. Studies in vitro using both plasma and brain homogenates showed the analogue to have increased biological stability and qualitative differences in metabolism as compared to TRH. Studies in vivo corroborated those observed in vitro. It is speculated that the increased biological stability of the TRH analogue could explain its improved CNS potency in vivo. 20 references. (Author abstract modified)

000033 Briley, Michael S.; Fillion, Gilles; Beaudoin, Dominique; Fillion, Marie-Paule; Langer, Salomon Z. LERS, Synthelabo, 58 rue de la Glaciere, F-75013 Paris, France **3H-imipramine binding in neuronal and glial fractions of horse striatum.** European Journal of Pharmacology. 64(2/3):191-194, 1980.

The localization of the specific high affinity binding site for 3H-imipramine in glial and neuronal fractions of horse striatum was studied. The glial fraction prepared from horse striatum contained less than 20% of the specific high affinity 3H-imipramine binding sites found in the neuronal fraction prepared from the same tissue. The binding in the glial fraction was considered to result from minor cross contamination of the two fractions. It is concluded that there is probably no specific 3H-imipramine binding in glial cells. 8 references. (Author abstract modified)

000034 Brown, D. A.; Collins, G. G. S.; Galvan, M. Dept. of Pharmacology, School of Pharmacy, University of London, 29/39 Brunswick Square, London, WC1N 1AX, England **Influence of cellular transport on the interaction of amino acids with gamma-aminobutyric acid (GABA)-receptors in the isolated olfactory cortex of the guinea-pig.** British Journal of Pharmacology. 68(2):251-262, 1980.

The influence of cellular transport on the interaction of amino acids with GABA receptors in the isolated olfactory cortex of the guinea-pig was investigated. Freshly cut guinea-pig olfactory cortex slices contained 2.2mmol GABA tissue weight,

which declined during in vitro incubation in the absence of exogenous GABA, but increased when incubated with GABA. Uptake of (3H)GABA was inhibited by nipecotic acid, beta-amino-n-butyric acid (BABA), L-2,4-diaminobutyric acid (DABA), (or -)cis-3-aminocyclohexane carboxylic acid (ACHC), and 3-aminopropanesulphonic acid, but was increased by beta-alanine. It is concluded: 1) that the depolarizing action of exogenous GABA is limited by cellular uptake; 2) that surface depolarizations produced by nipecotic acid, DABA, BABA, and ACHC may be mediated by the release of GABA; and 3) that neuronal, rather than glial transport systems are responsible for these effects. 34 references. (Author abstract modified)

000035 Brown, Patricia Ann; Vernikos, Joan. NASA-Ames Research Center, Biomedical Research Division, 239-17, Moffett Field, CA 94035 **Antihistamine effect on synaptosomal uptake of serotonin, norepinephrine and dopamine.** European Journal of Pharmacology. 65(1):89-92, 1980.

The nature and specificity of the effect of histamine H1 and H2 receptor antagonists on the uptake of serotonin (5-HT), norepinephrine (NE), and dopamine (DA) were studied in rat forebrain synaptosomes. Low concentrations of the H1 antagonist, pyrilamine, competitively inhibited 5-HT uptake, had little effect on NE uptake, and no effect on DA uptake. At the same concentrations, two other H1 antihistamines, promethazine and diphenhydramine, and two H2 antihistamines, metiamide and cimetidine, had no effect on 5-HT or DA uptake. Diphenhydramine had a small inhibitory effect on NE uptake. It is concluded that at low concentrations, pyrilamine is a relatively selective and potent competitive inhibitor on 5-HT uptake, an action which is uncharacteristic of several other antihistamines. 10 references. (Author abstract modified)

000036 Caccia, S.; Carli, M.; Garattini, S.; Poggesi, E.; Rech, R.; Samanin, R. Istituto di Ricerche Farmacologiche Eritrea, 62-20157-Milan, Italy **Pharmacological activities of clobazam and diazepam in the rat: relation to drug brain levels.** Archives Internationales de Pharmacodynamie et de Therapie. 243(2):275-283, 1980.

Brain distribution and various pharmacological effects of clobazam and diazepam were studied in rats. When given at 10 mg/kg i.p. the compounds reached peak brain levels 15 min after injection, and showed similar half lives. At peak time brain levels were proportional to the dose administered. Very little of the N-desmethylmetabolite of each compound was found in the brain. Clobazam was less effective than diazepam in protecting rats from pentetrazol convulsions, disrupting rota-rod performance and increasing punished responses in a conflict test, the relative potencies ranging from four to eight in the various tests. The results are discussed in relation to the importance of animal species selection for predicting favorable therapeutic effects in humans. 16 references. (Author abstract)

000037 Cain, Donald P. Dept. of Psychology, University of Western Ontario, London, Ontario, Canada **Effects of kindling or brain stimulation on pentylenetetrazol-induced convulsion susceptibility.** Epilepsia. 21(3):243-249, 1980.

The effects of kindling or nonkindling brain stimulation of pentylenetetrazol (PTZ) induced convulsion susceptibility was assessed in rats. The results show that repeated brain stimulation alone is sufficient to reduce the threshold dose of PTZ required to evoke a generalized convulsion, and that kindled convulsions do not significantly reduce the threshold further. However, kindled convulsions do increase the PTZ-induced convulsion duration and severity relative to that seen in stimulated or unstimulated animals. These results suggest that the increased convulsion susceptibility has two components that depend on different aspects of brain stimulation kindling. 13 references. (Author abstract)

000038 Campbell, Iain C.; Murphy, Dennis L.; Gallager, Dorothy W.; Tallman, John F.; Marshall, Elizabeth F. Clinical Neuropharmacology Branch, NIMH, Bethesda, MD 20205 **Neurotransmitter-related adaptation in the central nervous system following chronic monoamine oxidase inhibition.** In: Singer, T., Monoamine oxidase. New York, Academic Press, 1979. 557 p. (p. 517-530).

To study the mode of action of antidepressant drugs and the etiological factors in the affective disorders, the acute and long-term effects of the drugs on rat brain amine metabolism were compared. Specific data are presented on neurotransmitter related adaptation in the CNS following chronic monoamine oxidase (MAO) inhibition. Adaptive changes in the 5-HT and norepinephrine metabolizing systems in the CNS in response to chronic MAOI administration were found. Data obtained from assays of tyrosine and tryptophan hydroxylase suggest that MAO-A and MAO-B do not directly mediate the changes. Results indicate that the mechanisms of adaptation are elaborate and extensive. 66 references.

000039 Campos, C. J. R.; Cavalheiro, E. A. Neurofisiologia, Dept. Fisiologia, Escola Paulista de Medicina, Rua Botucatu, 862, 04023 Sao Paulo, S.P., Brazil **The paradoxical effect of lidocaine on an experimental model of epilepsy.** Archives Internationales de Pharmacodynamie et de Therapie. 243(1):66-73, 1980.

The antiepileptic and epileptic effects of lidocaine were studied. The former was studied on an experimental model of epilepsy introduced by Tabel et al., using low doses of lidocaine hydrochloride and the latter carried out by studying the electrographic epileptic manifestations of large doses of lidocaine hydrochloride. A clear anticonvulsant effect of lidocaine with a wide safety margin regarding toxic and lethal levels was observed in the experimental model of epilepsy used. A convulsant action of lidocaine at concentrations of 75 mg/kg and 150 mg/kg is reported. The dose of 150 mg/kg (i.p.) was lethal for all animals. The cause of death is discussed. 25 references. (Author abstract modified)

000040 Carmona, Euridice; Gomes, Cecilia; Trolin, Gustaf. Gomes: Depto. de Farmacologia, Escola Paulista de Medicina, C.P. 20372, 01000 Sao Paulo, S.P., Brazil **Effect of aminooxyacetic acid (AOAA) on GABA levels in some parts of the rat brain.** Naunyn-Schmiedeberg's Archives of Pharmacology. 312(1):51-55, 1980.

The accumulation of GABA in the cerebellum and medulla oblongata/pons of male albino rats was studied after inhibition of GABA-transaminase (GABA-T) by aminooxyacetic acid (AOAA). GABA accumulation in the cerebellum was maximal after a 50mg/kg i.v. dose of AOAA. Intraperitoneal injections were less effective. The GABA level in cerebellum remained stable for at least 30 minutes after administration of 3-mercaptopriopionic acid to AOAA treated rats. Results suggest that AOAA induces a near complete inhibition of GABA-T without substantially affecting glutamic acid decarboxylase activity. 19 references. (Author abstract modified)

000041 Carruba, Michele O.; Nistico, Giuseppe; Mantegazza, Paolo. Dept. of Pharmacology, School of Medicine, University of Milan, Via Vanvitelli 32, I-20129 Milan, Italy **Evidence for a receptor supersensitivity following impairment of central serotonergic activity in the rabbit.** Naunyn-Schmiedeberg's Archives of Pharmacology. 309(2):125-129, 1979.

The hyperthermic response to serotonergic agonists was examined in male New Zealand rabbits pretreated with 5,6-dihydroxytryptamine (5,6-DHT) or p-chlorophenylalanine (PCPA). Intracerebroventricular injections of 5,6-DHT significantly potentiated the increase in body temperature induced by quipazine or by 5-hydroxytryptophan (5-HTP) in combination with the monoamine oxidase inhibitor phenylethylhydrazine. Pretreatment with subcutaneous injections of PCPA enhanced the hyperthermic effect of quipazine, but inhibited the hyperthermic response to 5-HTP and phenylethylhydrazine. Results suggest that interruption of serotonergic transmission results in subsequent supersensitivity, analogous to that described for the catecholaminergic system. 36 references. (Author abstract modified)

000042 Carruba, Michele O.; Ricciardi, Sante; Muller, Eugenio E.; Mantegazza, Paolo. Dept. of Pharmacology, School of Medicine, University of Milan, Via Vanvitelli 32, I-20129 Milan, Italy **Anorectic effect of lisuride and other ergot derivatives in the rat.** European Journal of Pharmacology. 64(2/3):133-141, 1980.

The anorectic effect and the mechanism by which three ergot drugs (lisuride, lergotrile, and bromocriptine) induce anorexia were investigated in hungry rats. Experiments were also performed to verify whether ergot-induced anorexia was coupled with central nervous system stimulant effects. Lisuride and lergotrile failed to increase locomotor activity or to induce stereotyped behavior at doses corresponding to a 50% inhibition of food intake. At this dose ,bromocriptine slightly stimulated motor activity. The anorectic effect of the three compounds was selectively antagonized by blockers of dopamine (DA) receptors in the central nervous system but not by either inhibition of catecholamine synthesis or blocade of alpha or beta-adrenoceptors or of serotonergic receptors. Also two blockers of peripheral DA receptors failed to antagonize ergoline-induced anorexia. Findings indicate that stimulation of DA receptors involved in feeding behavior was responsible for the anorexigenic effect of the ergot derivatives investigated. It is reported that in most instances this effect occurred at dose levels which failed to induce central stimulant effects. 37 references. (Author abstract modified)

000043 Casey, Daniel E.; Gerlach, Jes; Christensson, Erik. Dept. of Psychiatry, V. A. Medical Center, Portland, OR 97201 **Dopamine, acetylcholine, and GABA effects in acute dystonia in primates.** Psychopharmacology. 70(1):83-87, 1980.

To clarify the etiology of neuroleptic-induced acute dystonic reactions, monkeys (Cercopithecus aethiops) were treated with haloperidol at doses sufficient to evoke dystonia, and the effects of agents that influenced dopaminergic, cholinergic, or GABAergic neurotransmitters were evaluated. Apomorphine, a dopamine (DA) agonist, and biperiden, an acetylcholine (ACh) antagonist, decreased acute dystonia, whereas alpha-methyl-p-tyrosine (AMPT), an inhibitor of DA synthesis, and physostigmine, an ACh agonist, increased the symptoms. Muscimol, a GABA agonist, increased the dynstonias in a dose dependent way, and GABA inhibition with picrotoxin also aggravated dystonia, complicated by systemic intoxication and seizures. The reciprocal interaction between DA and ACh influences is consistent with clinical findings and animal models of dyskinesias. Dystonia may also be modulated by GABAergic substrates, but the results suggest complex interactions among DA, ACh, and GABA neurotransmission. Symptoms involving the orofacial, limb, and trunk regions, and purposeless overactivity are discussed in comparison with acute and tardive neuroleptic-induced movement disorders. 20 references. (Author abstract modified)

000044 Cavero, I.; Gomeni, R.; Lefevre-Borg, Francoise; Roach, A. G. Biology Dept., Synthelabo (LERS), Cardiovascular Group, 58, rue de la Glaciere, F-75013, Paris, France **Comparison of mianserin with desipramine, maprotiline and phentolamine on cardiac presynaptic and vascular postsynaptic alpha-adrenoceptors and noradrenaline reuptake in pithed normotensive rats.** British Journal of Pharmacology. 68(2):321-332, 1980.

The cardiovascular effects of intravenous desipramine, maprotiline, mianserin, and phentolamine were examined and compared in pithed rats. Several experimental procedures were used to distinguish between the effects of the compounds on cardiac presynaptic alpha-adrenoceptors and on neuronal noradrenaline reuptake, as inhibition of either mechanisms produces an increase of neurotransmitter concentration within the sympathetic synapse and therefore results in a greater end organ response. Pressor responses elicited by noradrenaline were potentiated by desipramine and maprotiline, reduced by phentolamine and not significantly modified by mianserin. However, all four compounds inhibited the pressor action of tyramine. Furthermore, mianserin reduced the pressor response to adrenaline. Results indicate that mianserin is an antagonist of both cardiac presynaptic and vascular postsynaptic alpha-adrenoceptors and also inhibits the neuronal reuptake of noradrenaline. 27 references. (Author abstract modified)

000045 Chavez, Edmundo; Cuellar, Adela. Depto. de Bioquimica, Instituo Nacional de Cardiologia Ignacio Chavez, Mexico 22, Mexico, D. F. **ATP complexes with the ATPase inhibitor quercetin.** Life Sciences. 27(16):1477-1482, 1980.

The mechanisms involved in the increased fluorescence intensity induced by the interaction between adenosine 5'-triphosphate (ATP) and the adenosine triphosphatase (ATPase) inhibitor quercetin were investigated. Results show that the fluorescence induced by the ATP/quercetin complex is higher than that observed with other purine or pyrimidine nucleotide triphosphates. This fluorescence developed by the interaction of ATP with quercetin can be used to monitor ATP dependent enzymatic reactions as well as for determination of ATP. 7 references. (Author abstract modified)

000046 Chiodo, Louis A.; Antelman, Seymour M. Dept. of Psychology, Western Psychiatric Institute, University of Pittsburgh, Pittsburgh, PA 15260 **Repeated tricyclic antidepressants induce a progressive neurons to autoreceptor stimulation.** European Journal of Pharmacology. 66(2/3):255-256, 1980.

The firing rates of single dopaminergic neurons in the zona compacta were studied in male rats treated chronically with imipramine, amitriptyline, or iprindole. Dopamine (DA) autoreceptor sensitivity was indexed by measuring the degree to which apomorphine (4mcg/kg i.v.) inhibited spontaneous neuronal discharge. All three tricyclic antidepressants significantly attentuated the degree to which apomorphine decreased neuronal firing. The incidence of neurons whose activity was excited by apomorphine increased as the length of drug treatment increased. Results indicate that repeated tricyclic antidepressant treatment can induce subsensitivity in Da autoreceptors and that chronic and acute stimulation of DA autoreceptors may have opposite functional consequences. 5 references.

000047 Chiodo, Louis A.; Antelman, Seymour M. Psychobiology Program, Dept. of Psychology, University of Pittsburgh, Pittsburgh, PA 15260 **Repeated tricyclics induce a progressive dopamine autoreceptor subsensitivity independent of daily drug treatment.** Nature. 287(5781):451-454, 1980.

Repeated administration of both typical and atypical tricyclic antidepressants was found to induce a progressive subsensitivity of dopamine autoreceptors in male albino rats (n = 53). This gradual augmentation of dopamine autoreceptor subsensitivity depends on the passage of time rather than daily tricyclic anti-

depressant administration. Thus, short-term drug treatment seems to be sufficient to trigger a subsensitivity which undergoes a progressive enhancement as a function of time. If presynaptic dopamine autoreceptor subsensitivity is critical for the therapeutic efficacy of tricyclic antidepressants, then daily treatment with these agents may not be necessary for the amelioration of depression. 21 references. (Author abstract modified)

000048 Chiodo, Louis A.; Antelman, Seymour M. Psychobiology Program, Dept of Psychology, University of Pittsburgh, Pittsburgh, PA 15260 **Tricyclic antidepressants induce subsensitivity of presynaptic dopamine autoreceptors.** European Journal of Pharmacology. 64(2/3):203-204, 1980.

The hypothesis that tricyclics may exert therapeutic effects, at least in part, by inducing a subsensitivity of presynaptic dopamine (DA) receptors located on the soma and dendrites of DA neurons (autoreceptors) was tested. The effects of tricyclic treatment on the subsequent sensitivity of DA autoreceptors was examined in male rats. Prior treatment with both imipramine and amitriptyline produced a significant decrease in the ability of an exclusively presynaptic dose of apomorphine to attenuate DA neuronal discharge. When the ability of tail pressure to modify the firing of DA neurons was examined, each drug significantly potentiated the change in DA discharge produced by tail pressure. It is suggested that at least some tricyclics can induce a subsensitivity of presynaptic DA receptors. 4 references.

000049 Choma, Paul P.; Puri, Surendra K.; Volicer, Ladislav. Dept. of Pharmacology, Boston University School of Medicine, 80 East Concord St., Boston, MA 02118 **Circadian rhythm of cyclic nucleotide and GABA levels in the rat brain.** Pharmacology. 19(6):307-314, 1979.

Daily variations in levels of cyclic nucleotides and GABA were studied in seven brain regions of male Sprague-Dawley rats. Cyclic AMP levels in the cerebellum and pons medulla oblongata; cyclic GMP levels in the cerebellum, cerebral cortex, striatum, and hypothalamus; and GABA levels in the pons medulla oblongata and striatum had circadian rhythms. Cyclic GMP in the pons medulla oblongata and GABA in the hypothalamus exhibited ultradian rhythms. 25 references. (Author abstract modified)

000050 Chung, Eunyong Hwang; Van Woert, Melvin H. Mount Sinai School of Medicine, Fifth Ave. and 100th St., New York, NY 10029 **Acute versus chronic effects of serotonin uptake blockers on potentiation of the** Communications in Psychopharmacology. 4(2):161-167, 1980.

Changes in the serotonin syndrome in rats produced by tranylcypromine (20mg/kg) alone and tranylcypromine (20mg/kg) plus L-tryptophan (50mg/kg) were compared after a single intraperitoneal injection and 14 days of treatment with fluoxetine, paroxetine, zimelidine, trazodone and amitryptyline. A single injection of fluoxetine, paroxetine and zimelidine potentiated the serotonin syndrome produced by tranylcypromine with L-tryptophan and tranylcypromine alone. Chronic administration of fluoxetine, paroxetine and zimelidine were much less potent than a single dose in enhancing the syndrome. Trazodone and amitryptyline did not have any effect on the syndrome. Although acute and chronic fluoxetine treatment had similar effects on brain synaptosomal 3H-serotonin (5HT) uptake, only chronic fluoxetine administration decreased 5HT synthesis and 3H-typtophan uptake into synaptosomes. Chronic treatment with zimelidine, trazodone, and amitryptyline also significantly reduced synaptosomal 3H-tryptophan uptake. The behavioral and biochemical findings suggest that there may be no significant enhancement of serotonergic neurotransmission during chronic therapy with 5HT uptake inhibitors. 23 references. (Author abstract)

000051 Cicero, Theodore J.; Meyer, Edward R.; Gabriel, Steven M.; Bell, Roy D.; Wilcox, Carol E. Dept. of Psychiatry, Washington University School of Medicine, Saint Louis, MO 63110 **Morphine exerts testosterone-like effects in the hypothalamus of the castrated male rat.** Brain Research. 202(1):151-164, 1980.

Naloxone was found to competitively antagonize the depressive effects of testosterone on serum luteinizing hormone (LH) in the castrated rat and, testosterone was found to competitively antagonize the LH releasing properties of naloxone. In addition, morphine and testosterone both depressed serum LH levels in a dose dependent fashion in the acutely castrated animal. Moreover, morphine was just as effective as testosterone in reversing the castration-induced fall in hypothalamic LH releasing hormone (LHRH), which occurs in the chronically castrated male rat. Results support the concept that an unidentified opioid containing neuronal system regulates activity in the hypothalamic/pituitary/LH axis and mediates the effects of testosterone on this axis. 31 references. (Author abstract modified)

000052 Clement-Cormier, Yvonne; Smith, Charles E. Dept. of Pharmacology, University of Texas Medical School, Houston, TX 77025 **(3H)2-amino-6,7-dihydroxy-1,2,3,4-tetrahydronaphthalen (ADTN): regional distribution and in vivo binding after acute and chronic drug treatment.** Neurochemical Research. 5(6):641-651, 1980.

The regional distribution and in vivo binding of the dopamine analog 2-amino-6,7-dihydroxy-1,2,3,4-tetrahydronaphthalen (ADTN) was studied in rat brain. The highest density of binding sites was in the striatum, with virtually no binding in the cerebellum. The binding of (3H)ADTN reflects an occupation of specific dopamine sites because the binding was diminished by the simultaneous administration of the dopamine antagonist haloperidol or the dopamine precursor L-3,4-dihydroxyphenylalanine (L-dopa). Chronic administration of haloperidol or L-dopa prior to assaying for in vivo binding resulted in an increase in the number of sites for (3H)ADTN which correlates to the increase observed in in vitro assays following long-term treatment with these agents. The subcellular distribution of in vivo labeled ADTN sites in the caudate nucleus indicate a high density of specific binding sites in the microsomal fraction, P3. Overall, these data demonstrate that the aminotetralins, such as ADTN, which bind with high affinity to the dopamine receptor in the caudate nucleus in vitro and in vivo, can provide precise information on the topography of this receptor. 36 references. (Author abstract modified)

000053 Clineschmidt, B. V.; Flataker, L. M.; Faison, E.; Holmes, R. Merck Institue for Therapeutic Research, West Point, PA 19486 **An in vivo model for investigating alpha1- and alpha2- receptors in the CNS: studies with mianserin.** Archives Internationales de Pharmacodynamie et de Therapie. 242(1):59-76, 1979.

Responses to intracisternal injection of clonidine, phenylephrine and methoxamine were examined in rats pretreated subcutaneously with various alpha-adrenoceptor antagonists believed to exhibit preference for alpha 2 or alpha 1-receptors in peripheral tissues. At the dose that eliminated the locomotor depressant effect of clonidine, the alpha 2-antagonist yohimbine did not antagonize the locomotor stimulant effects of phenyleprine and methoxamine. The alpha 1-antagonist prazosin abolished the increase in motor activity elicited by phenyleprine and methoxamine, but at the same dose prazosin did not offset the decrease in motor activity caused by clonidine. The alpha 1-antagonist

azapetine, was without effect on the decrease in activity produced by clonidine. These findings indicate that the locomotor responses to the alpha 2-agonist clonidine and the alpha 1-agonist phenylephrine can be used for determining whether or not a particular substance acts in vivo as a selective antagonist for alpha 1- or alpha 2-receptors in the central nervous system. In rats pretreated with mianserin, the locomotor depressant effect of clonidine and stimulant action of phenylephrine were unchanged. In an in vivo model system, mianserin given systemically did not display any appreciable selectivity for blocking alpha 1- or alpha 2-receptors. 25 references. (Author abstract modified)

000054 Coelle, E.-F.; Osborne, N. N.; Neuhoff, V.; Sontag, K.-H. Max-Planck-Institut fur Experimentelle Medizin, Hermann-Rein-Strasse 3, D-3400 Gottingen, Germany **/The influence of benzoctamine on dopamine and norepinephrine contents of the substantia nigra and on the muscle stretch reflex of the cat./** Der Einfluss von Benzoctamin auf den Dopamin- und Noradrenalin-Gehalt der Substantia nigra und auf die Muskeldehnungsreflexe der Katze. Arzneimittel-Forschung. 29(10):1556-1560, 1979.

The effects of benzoctamine on dopamine (DA) and norepinephrine (NE) contents in substantia nigra and muscle stretch reflexes of the cat were investigated. Concentration of DA and NE were decreased to a maximum of 40% and 20%, respectively, in the substantia nigra of precollicular and prenigral decerebrated cats previously treated with benzoctamine, while the tyrosine hydroxylase and monoamine oxidase activities remained unchanged. Muscle stretch reflexes recorded simultaneously showed a significant decrease of stretch tension which is evoked by a clear reduction of Ia discharges of the primary muscle spindle afferents. It appears that benzoctamine suppresses reflexly evoked gamma-motoneurone discharges. 26 references. (Journal abstract modified)

000055 Collins, J. G.; Roppolo, James R. Dept. of Anesthiology, Yale University School of Medicine, 333 Cedar St., New Haven, CT 06510 **A comparison of human tactile stimulus velocity discrimination with the ability of S-I cortical neurons in awake rhesus monkeys to signal the same velocity differences before and after non-anesthetic doses of pentobarbital.** Brain Research. 198(2):307-321, 1980.

Using psychophysical techniques, the abililty of human Ss to discriminate the velocity of brush movement across the glabrous skin of the hand was determined, and the same stimulus was then used in a series of neurophysiological experiments designed to determine the ability of neurons in the primary somatosensory cortex (SI) of awake rhesus monkeys to signal differences in the same velocities. Signal detection data reveal that humans can discriminate two velocities much better than most of the cortical cells of the monkeys can signal the differences in the same velocities by changes in their stimulus-induced mean firing frequency. Nonanesthetic doses of pentobarbital caused a reduction in the firing frequency of the SI neurons but at the same time enhanced the difference in firing frequency elicited by the two different stimulus velocities. This result suggests that if firing frequency is coding for stimulus presence or velocity, at 8mg/kg the monkeys may have a more difficult time detecting the stimulus but an easier time discriminating between different velocities of the stimulus. 24 references. (Author abstract modified)

000056 Collins, Robert C.; Caston, Torris V. Dept. of Neurology, St. Louis City Hospital, 1515 Lafayette, St. Louis, MO 63104 **Activation of cortical circuits during interictal spikes.** Annals of Neurology. 6(2):117-125, 1979.

Penicillin, bicuculline, and strychnine were used as topical convulsants in unanesthetized rats to study aspects of interictal spiking. Bicuculline (0.1mM) was more potent than penicillin (3.mM) or strychnine (1.5mM) in initiating simple discharges, and at only slightly higher doses caused complex spikes and afterdischarges with motor convulsions. Penicillin caused similar types of discharges at much higher concentrations, but strychnine failed to produce either complex spikes or afterdischarges. Penicillin and bicuculline were similar in causing an increase in utilization of carbon 14-deoxyglucose in cortical layers I to III and V. Strychnine increased metabolism in layer V, with individual columns running from this base to the surface. Areas of decreased metabolism highlighted the strychnine focus and are probably related to a pericolumnar inhibition mediated by GABA. Such inhibition would be blocked in the penicillin and bicuculline focus, an effect which might be responsible for the genesis of complex spikes and afterdischarges and a more uniform activation of cortical metabolism. 51 references. (Author abstract)

000057 Cook, Leonard; Sepinwall, Jerry. Dept. of Pharmacology, Hoffman-La Roche, Inc., Nutley, NJ **Relationship of anticonflict activity of benzodiazepines to brain receptor binding, serotonin, and GABA.** Psychopharmacology Bulletin. 16(1):30-32, 1980.

Animal models like the matrazol convulsant and conflict tests were used to evaluate hypotheses concerning the roles of the benzodiazepine receptor, of GABA, and of serotonin in the rat. A high correlation between anticonflict activity and affinity for the benzodiazepine receptors and the absence of tolerance to both actions upon repeated administration lend support to the proposal that the receptor has physiological relevance to the antianxiety actions of the benzoxiazepines. Muscimol and 4,5,6,7-tetrahydroisoxazolo(5,4-c)pyridin-3-ol were either inactive or only marginally active in the conflict procedure up to dose levels that clearly depressed unpunished variable interval responding. Thus the involvement of GABA in the antianxiety actions per se was not supported. Cyproheptadine exhibited anticonflict activity over a wise range of doses. Earlier findings suggesting the involvement of serotonin in the antianxiety action of the benzodiazepines are thus supported. 12 references.)

000058 Coutinho-Netto, Joaquim; Abdul-Ghani, Abdul-Salem; Bradford, Henry F. Bradford: Dept of Biochemistry, Imperial College, London SW7 2AZ, England **Suppression of evoked and spontaneous release of neurotransmitters in vivo by morphine.** Biochemical Pharmacology. 29(20):2777-2780, 1980.

The effects of morphine and naloxone on the release of acetylcholine and amino acids from sensorimotor cortex were studied using an in vivo cannula. Morphine (10mg/kg) reduced the spontaneous release of acetylcholine but was without detectable effect on the spontaneous release of amino acids. It also prevented the release of both acetylcholine and transmitter amino acids (glutamate, asparate, and GABA) induced by application of the depolarizing scorpion venom toxin, tityustoxin. These actions of morphine were prevented by naloxone. 38 references. (Author abstract modified)

000059 Coyle, Joseph T.; Johnston, Michael V. Dept. of Pharmacology and Experimental Therapeutics, Johns Hopkins University School of Medicine, Baltimore, MD 21205 **Functional hyperinnervation of cerebral cortex by noradrenergic neurons results from fetal lesions: parallels with schizophrenia.** Psychopharmacology Bulletin. 16(1):27-29, 1980.

In an attempt to develop an animal model consistent with findings of elevated levels of catecholamines in limbic forebrain structures of postmortem brain speciment of patients suffering

from schizophrenia, a technique that produces hyperinnervation of cortical limbic structures by catecholaminergic afferents was employed. Administration of methylazoxymethanol acetate to pregnant rats at 15 days of gestation caused a degeneration of fetal cerebral cortical neurons resulting in cortical atrophy in adulthood. ALthough the concentration of presynaptic markers for cortical GABAergic neurons was not remarkably affected, the concentration of the markers for cortical noradrenergic terminals was increased by over twofold. The increased cortical concentration of the norepinephrine metabolite 3-methoxy-4-hydroxyphenylglycol sulfate with decreased beta receptors suggests that the noradrenergic hyperinnervation is functionally significant. In certain respects, it is suggested, these neurochemical abnormalities mimic alterations found in the brains of schizophrenics. 10 references.

000060 Crandall, Elizabeth A.; Fernstrom, John D. Laboratory of Brain and Metabolism, Dept. of Nutrition and Food Science, Massachusetts Institute of Technology, Cambridge, MA 02139 **Acute changes in brain tryptophan and serotonin following carbohydrate or protein ingestion by diabetic rats. (Unpublished paper).** Research Report, NIMH Grant MH-25857, 1979. 29 p.

The hypothesis tested was that, because diabetic rats cannot secrete insulin, carbohydrate ingestion should not alter significantly the serum pattern of the large neutral amino acids, and, therefore, brain tryptophan and 5-hydroxyindoles should not change either. Data were also obtained on the effect of ingesting a protein containing meal on the serum tryptophan ratio and on brain indoles. The data demonstrate that the absence of a carbohydrate-induced increment in brain indole levels follows indirectly from the absence of the insulin-induced rise in the serum tryptophan ratio. The diabetic rat's inability to experience normal, carbohydrate-induced increments in brain serotonin suggest that brain functions normally dependent on such neurochemical signals may be abnormal. 39 references.

000061 Craviso, Gale L.; Musacchio, Jose M. Musacchio: Dept. of Pharmacology, New York University Medical Center, 550 First Ave., New York, NY 10016 **High affinity binding of the antitussive dextromethorphan to guinea-pig brain.** European Journal of Pharmacology. 65(4):451-453, 1980.

The binding of tritiated dextromethorphan (3H-DM) to guniea-pig brain homogenates was examined. Binding was: highest in the pons, medulla, and cerebellum; lower in the thalamus/hypothalamus and midbrain; and lowest in the cortex and striatum. Binding to brainstem homogenates was saturable and reversible, with both high and low affinity sites. Opiate agonists and antagonists did not significantly inhibit binding, but certain centrally acting antitussive drugs were able to interact with 3H-DM binding sites. 5 references.

000062 Cross, A. J.; Owen, F. Div. of Psychiatry, Clinical Research Centre, Watford Road, Harrow, HA1 3UJ, Middlesex, England **Characteristics of 3H-cis-flupenthixol binding to calf brain membranes.** European Journal of Pharmacology. 65(4):341-347, 1980.

The binding of 3H-cis-flupenthixol (3H-FPT) to calf brain membranes was studied in vitro. Binding levels were highest in the striatum and nucleus accumbens. No significant binding was observed in the pituitary. The potencies of neuroleptics, dopaminergic ergot alkaloids, and dopamine (DA)agonists in inhibiting 3H-FPT binding to striatal membranes were highly correlated with the drugs' potencies inhibiting DA stimulated adenylate cyclase, but not with their potencies in inhibiting the binding of 3H-spiperone. Analysis of the inhibition of 3H-FPT binding by butyrophenones revealed two classes of binding sites. It is suggested that 3H-FPT binds predominantly to a class of dopaminergic sites associated with DA stimulated adenylate cyclase. 21 references. (Author abstract modified)

000063 Curtis, D. R.; Lodge, D.; Bornstein, J. C. Dept. of Pharmacology, John Curtin School of Medical Research, P.O. Box 334, Canberra City, ACT, 2601, Australia **Nuciferine and central glutamate receptors.** Journal of Pharmacy and Pharmacology. 31(11):795-797, 1979.

The inhibitory effects of L-nuciferine and 9-methoxyaporphine on the excitation of spinal neurons by excitatory amino acids were examined. Experiments were performed on dorsal horn interneurons and Renshaw cells in lumbar segments of five spinal cats. Excitation induced by L-glutamate or quisqualate was most sensitive to antagonism by L-nuciferine, and excitation induced by kainate was least sensitive; excitation induced by N-methyl-D-aspartate showed intermediate sensitivity to L-nuciferine. Similar effects were observed with 9-methoxyaporphine. Results suggest that L-nuciferine may interact with L-glutamate receptors that are not activated by kainate. 22 references.

000064 Dajani, Esam Z.; Bianchi, Robert G.; Calhoun, David W. Dept. of Biological Research, Searle Laboratories, Box 5110, Chicago, IL 60680 **Synergistic actions of propantheline bromide with cimetidine and thiopropazate hydrochloride in the prevention of stress ulcer formation in rats.** Journal of Pharmacology and Experimental Therapeutics. 210(3):373-377, 1979.

Intragastric administration of propantheline bromide (PB), cimetidine (CM), and thiopropazate hydrochloride (TP) produced dose dependent inhibition of stress ulcer formation in male rats subjected to forced exertion. PB was 10 times more potent than TP and 44 times more potent than CM. Subtherapeutic doses of PB and TP produced synergistic antiulcer activity, and PB potentiated the antiulcer actions of CM. TP and CM showed only simple additive effects. Results indicate that a combination of anticholinergic drugs with histamine-H2 antagonists or with tranquilizers may be useful in preventing stress ulcer disease in humans. 24 references. (Author abstract modified)

000065 Daniels, Mathew P.; Vogel, Zvi. Laboratory of Biochemical Genetics, NHLBI, NIH, Bethesda, MD 20205 **Localization of alpha-bungarotoxin binding sites in synapses of the developing chick retina.** Brain Research. 201(1):45-56, 1980.

Alpha-bungarotoxin binding sites in chick retina from 12 days in ovo to hatching, were visualized at the ultrastructural level by use of a 1:1 conjugate of horseradish peroxidase with alpha-bungarotoxin. At all stages, binding sites in the inner plexiform layer were localized in synapses, predominantly on or near the postsynaptic membrane. Localization of binding sites was found in bipolar and amacrine cell synapses which appeared morphologically immature as well as in more well developed synapses. Results suggest that alpha-bungarotoxin binding synapses, tentatively considered to be nicotininc cholinergic, are formed throughout the course of synaptogenesis, and that the aggregation of nicotinic receptors occurs early in the formation of these synapses. 32 references. (Author abstract modified)

000066 Davis, Mary E.; Akera, Tai; Brody, Theodore M. Akera: Dept. of Pharmacology and Toxicology, Michigan State University, East Lansing, MI 48824 **Reduction of opiate binding to brainstem slices associated with the development of tolerance to morphine in rats.** Journal of Pharmacology and Experimental Therapeutics. 211(1):112-119, 1979.

The binding of morphine, etorphine, and naloxone to thin slices of male Sprague-Dawley rat brainstem was examined. Sodium ion inhibited binding of the two opiate agonists and enhanced naloxone binding. The development of analgesic tolerance to morphine was accompanied by a reduction in opiate

binding. Opiate binding recovered partially during morphine withdrawal. Kinetic analyses indicated that sodium-induced changes in opiate binding sites were different from those caused by chronic morphine treatment. (Author abstract modified)

000067 de Langen, Cees D. J.; Mulder, Arie H. Mulder: Dept. of Pharmacology, Free University, Van der Boechorststraat 7, NL-1081 BT Amsterdam, The Netherlands **Effects of psychotropic drugs on the distribution of 3H-dopamine into compartments of rat striatal synaptosomes and on subsequent depolarization-induced 3H-dopamine release.** Naunyn-Schmiedeberg's Archives of Pharmacology. 311(2):169-177, 1980.

After male Wister rat striatal synaptosomes were superfused with radiolabeled dopamine (3H-DA) compartmental analysis of the efflux of radioactivity was used to study drug effects on total accumulation of 3H-DA, its intrasynaptosomal distribution, and its depolarization-induced release. Reserpine diminished depolarization (40mM potassium) induced 3H-DA release and prevented retention of 3H-DA as a bound fraction. The uptake inhibitors nomifensine and benztropine did not affect the distribution of accumulated 3H-DA into synaptosomal compartments and had no effect on the fraction of 3H-DA released by depolarization; at high concentrations, these drugs enhanced efflux. Tyramine and ()-amphetamine altered intrasynaptosomal distribution of 3H-DA and increased the efflux rate constant of radioactivity. Amphetamine, but not tyramine, showed a preferential effect on the releaseable 3H-DA pool. In micromolar concentrations, neuroleptic drugs (haloperidol, spiroperidol, and chlorpromazine) weakly inhibited 3H-DA accumulation and enhanced the efflux rate constant of radioactivity. 21 references. (Author abstract modified)

000068 De Montigny, C.; Wang, R. Y.; Reader, T. A.; Aghajanian, G. K. Centre de Recherche en Sciences Neurologiques, Dept. de Physiologie, Universite de Montreal, Montreal H3C 3J7, Quebec, Canada **Monoaminergic denervation of the rat hippocampus: microiontophoretic studies of pre- and postsynaptic supersensitivity to norepinephrine and serotonin.** Brain Research. 200(2):363-376, 1980.

The responsiveness of hippocampal CA3 pyramidal neurons to microiontophoretic applications of serotonin (5-HT), norepinephrine (NE), GABA, and isoproterenol (ISO) was assessed in rats following 5,7-dihydroxytryptamine (5,7-DHT) and 6-hydroxydopamine (6-OHDA) pretreatments and bilateral locus coeruleus lesions. Results indicate that 5-HT denervation induces neither presynaptic nor postsynaptic types of supersensitivity in hippocampal pyramidal cells, contrasting with the previously shown supersensitivity of ventral lateral geniculate and amygdaloid neurons following 5-HT denervation. NE denervation fails to induce a postsynaptic type of supersensitivity but leads to a marked prolongation of the response to NE indicative of a presynaptic mechanism. These results underscore the need for regional studies of neurotransmitters and drug action. 47 references. (Author abstract modified)

000069 DeGroof, Robert C.; Bianchi, C. Paul; Narayan, Srinivasa. Dept. of Pharmacology, Thomas Jefferson University, 1020 Locust St., Philadelphia, PA 19107 **The effect of diazepam on tension and electrolyte distribution in frog muscle.** European Journal of Pharmacology. 66(2/3):193-199, 1980.

Diazepam (0.00005M) did not alter resting tension in the frog sartorius muscle, but increased twitch tension and decreased tetanus tension. The drug also increased the calcium content of the intermediate pool and decreased the time constant of the slow pool. It is suggested that diazepam interferes with the calcium sequestering system of the sarcoplastic reticulum (slow pool) and causes an increase in the calcium content of the myofibrillar space (intermediate pool). 22 references. (Author abstract modified)

000070 Demenge, Pierre; Feuerstein, Claude; Mouchet, Patrick; Guerin, Bernard. Feuerstein: Laboratoire de Biologie Animale et Pharmacodynamie, UER de Pharmacie, F-38700 La Tronche, France **Stereospecific binding of 3H-haloperidol in rat dorsal spinal cord.** European Journal of Pharmacology. 66(1):117-120, 1980.

The binding of (3H)haloperidol was studied in pooled microdiscs punced from male Wistar rat dorsal spinal cord. Binding characteristics in the spinal cord were similar to those in the striatum, suggesting the presence of individualized dopaminergic receptor sites in the rat dorsal horn. The density of (3H)haloperidol binding sites was about three times lower in the dorsal horn than in the striatum. 9 references. (Author abstract modified)

000071 Dias, Renato D.; Carrasco, Maria A.; Souza, Diogo O.; Izquierdo, Ivan. Izquierdo: Departamento de Bioquimica, Instituto de Biociencias, UFRGS (centro), 9000-Porto Alegre, RS, Brazil **Effect of naloxone, haloperidol and propranolol on cyclic 3',5'-adenosine monophosphate content of rat amygdala.** European Journal of Pharmacology. 60(4):345-347, 1979.

Naloxone (0.4mg/kg i.p.) increased cyclic AMP levels in the amygdala of female Wistar rats, but not in the hippocampus, caudate, or hypothalamus. The effect was antagonized by haloperidol (0.5mg/kg i.p.) or propranolol (0.5mg/kg i.p.). Haloperidol also increased cyclic AMP levels in the amygdala and this increase was blocked by propranolol. Results suggest that endogenous opiates may exert a tonic inhibitory influence on central dopaminergic and beta-noradrenergic systems and that the dopaminergic and beta-noradrenergic innervation of the amygdala may interact antagonistically. 10 references. (Author abstract modified)

000072 Dibner, Mark D.; Molinoff, Perry B. Molinoff: University of Colorado Health Sciences Center, 4200 E. 9th Ave., Denver, CO 80262 **Agonist-induced changes in beta adrenergic receptor density and receptor-mediated responsiveness in slices of rat cerebral cortex.** Journal of Pharmacology and Experimental Therapeutics. 210(3):433-439, 1979.

Slices of male Sprague-Dawley rat cerebral cortex incubated with the beta-adrenergic receptor agonist (-)-isoproterenol showed a 30 to 50% decrease in number of binding sites for (125I)iodohydroxybenzylpindolol and a 60 to 80% decrease in isoproterenol stimulation cyclic AMP accumulation. The density of beta-adrenergic receptors was also decreased by (-)-norepinephrine, but not by ()-isoproterenol or dopamine. The decrease in receptor density was blocked by coincubation with the beta-adrenergic receptor antagonist sotalol. Chronic treatment with desmethylimipramine also decreased beta-adrenergic receptor density. 31 references. (Author abstract modified)

000073 Dickinson, Ronald G.; Harland, Robert C.; Ilias, Ajmal M.; Rodgers, Robert M.; Kaufman, Stuart N.; Lynn, Robert K.; Gerber, Nicholas. Dept. of Pharmacology, School of Medicine, University of Oregon Health Sciences Center, 3181 SW Sam Jackson Park Rd., Portland, OR 97201 **Disposition of valproic acid in the rat: dose-dependent metabolism, distribution, enterohepatic recirculation and choleretic effect.** Journal of Pharmacology and Experimental Therapeutics. 211(3):583-595, 1979.

A specific gas chromatographic assay was used to measure valproic acid (VPA) and its major conjugated metabolites in male Sprague-Dawley rats given single i.v. doses of VPA. The rate of elimination was dose dependent and followed first order kinetics only at the lowest dose. Secondary rises in the concen-

tration of HVA in the blood were attributed to enterohepatic circulation of free and conjugated drug. VPA produced dose dependent choleresis. The concentration of VPA was highest in the blood; moderate in the liver, kidney, heart, and lung; and low in the brain, fat, testis, and skeletal muscle. 44 references. (Author abstract modified)

000074 Diffley, David; Tran, Vinh Tan; Snyder, Solomon H. Snyder: Dept. of Psychiatry and Behavioral Sciences, Johns Hopkins University School of Medicine, Baltimore, MD 21205 **Histamine H1-receptors labeled in vivo: antidepressant and antihistamine interactions.** European Journal of Pharmacology. 64(2/3):177-181, 1980.

Histamine H1-receptors were labeled in vivo in mice by the intravenous injection of 3H-mepyramine to evaluate interactions with antihistamines and antidepressants. The potencies of H1-antihistamines in reducing 3H-mepyramine bindings in vivo were found to correspond to their pharmacological activities and to show parallels with their affinities for 3H-mepyramine binding sites in isolated brain membranes. Several antidepressants competed for 3H-mepyramine binding in vivo. It is reported that the most potent was doxepin with imipramine, mianserine, and iprindole being less active. 8 references. (Author abstract modified)

000075 Doggrell, Sheila A. Dept. of Pharmacology and Clinical Pharmacology, School of Medicine, University of Auckland, Private Bag, Auckland, New Zealand **Effect of mianserin on noradrenergic transmission in the rat anococcygeus muscle.** British Journal of Pharmacology. 68(2):241-250, 1980.

The effects of mianserin on the accumulation of (-)-(3H)noradrenaline (NA) on contractile responses to field stimulation, exogenously applied (-)NA, and to tyramine were studied in the rat anococcygeus muscle. Mianserin and nortriptyline inhibited the accumulation of (-)(3H)NA. Mianserin alone had no effect on contractile responses to field stimulation and to (-)NA but inhibited the responses to tyramine. In the presence of nortriptyline, the contractile responses to field stimulations were potentiated by mianserin. Results illustrate that, in the rat anococcygeus muscle, mianserin is a potent inhibitor of NA accumulation and may be an antagonist at presynaptic alpha-adrenoceptors. Mianserin also inhibits the responses to exogenously applied noradrenaline in this tissue by an action or actions at the level of, or distal to, the postsynaptic alpha-adrenoceptor. 24 references. (Author abstract modified)

000076 Domer, Floyd R.; Wolf, Carlos L. Dept. of Pharmacology, Tulane University School of Medicine, 1430 Tulane Ave., New Orleans, LA 70112 **Effects of lead on movement of albumin into brain.** Research Communications in Chemical Pathology and Pharmacology. 29(2):381-384, 1980.

The selectivity of the blood-brain barrier was compared in CD-1 mice exposed to sodium acetate or lead acetate during development. When tested after weaning, the lead exposed mice were hyperactive and smaller than sodium exposed mice. Methylphenidate, caffeine, ephedrine, and pemoline all caused an increase in the movement of radioiodinated serum albumin (RISA) into the brain of sodium exposed mice. The movement of RISA into the brain of lead exposed animals given saline, amphetamine, methylphenidate, or ephedrine was lower than that in corresponding sodium exposed controls. 10 references. (Author abstract modified)

000077 Dostalova, K.; Hrbek, J.; Sklenovsky, A. Institute of Pathological Physiology, Faculty of Medicine, Palacky University, Olomouc, Czechoslovakia **Influence of pyrithioxine on experimental hypoxia in rats.** In: Benesova, O., 21. Annual Czechoslovak Psychopharmacological Meeting. Jesenik Spa, Czechoslovakia, 1979. 140 p. (p. 79-82).

The effect of pyrithioxine on rat cortex after previous acute and repeated hypoxia in vivo and in vitro was studied in several series of experiments. Pyrithioxine proved to have a stabilizing effect on respiration under the conditions of long-term brain tissue survival. Especially during the third hour of incubation, it increased oxygen consumption and reduced ammonia formation in brain cortex slices. The mechanism of free ammonia formation is not yet accurately known: it could be matter of antiproteolytic effect during a long-term incubation or an influence of nucleotides participating in its detoxification. The improved respiration indicates a favorable influence of pyrithioxine on glucose utilization in long-term tissue survival. 4 references. (Author abstract modified)

000078 Dross, K.; Hopf, A. Hopf: Institut fur Hirnforschung der Universitat Dusseldorf, Moorenstrasse 5, D-4000 Dusseldorf, Germany **Studies on the distribution of 14C-sulpiride and its metabolites in the rat and guinea pig.** Pharmakopsychiatrie Neuro-Psychopharmakologie. 12(6):438-444, 1979.

The distribution of 14C-sulpiride and its metabolites in the organs and nervous system of rats was studied. Some guinea pigs and mice were also studied. After intraperitoneal injection in rats, about one third was metabolized while the remainder was excreted unchanged. The highest level of its metabolites was found in the liver (about 65% of total radioactivity). In the brain, 90% of the radioactivity consisted of unchanged sulpiride. The highest concentrations within the brain were found in the median eminence, circumventricular organs, plexus, and pineal body. It is suggested that the central effects of sulpiride are caused by its unchanged form rather than by its metabolites. 11 references. (Author abstract modified)

000079 Duckles, Sue Piper; Rapoport, Robert. Dept. of Pharmacology, College of Medicine, University of Arizona, Health Sciences Center, Tucson, AZ 85724 **Release of endogenous norepinephrine from a rabbit cerebral artery.** Journal of Pharmacology and Experimental Therapeutics. 211(1):219-224, 1979.

The stimulation evoked release of norepinephrine (NE) from rabbit basilar arteries was five times greater than that from ear arteries. Phenoxybenzamine and phentolamine significantly increased stimulation evoked NE release from basilar arteries. It is suggested that postsynaptic events in cerebral arteries are atypical, while transmitter release and modulation by presynaptic alpha-adrenergic receptors are similar to that in other blood vessels. (Author abstract modified)

000080 Dunwiddie, T. V.; Hoffer, B. J. Dept. of Pharmacology, University of Colorado, School of Medicine, Denver, CO 80262 **Adenine nucleotides and synaptic transmission in the in vitro rat hippocampus.** British Journal of Pharmacology. 69(1):59-68, 1980.

The effect of adenosine and various derivatives were examined in the in vitro hippocampal slice preparation from rat. The amplitudes of extracellularly recorded field potentials from the CA1 region were depressed by adenosine, and this effect could be antagonized by methylxanthines. It appears that adenosine acts at a synaptic site to depress transmission. Adenosine deaminase increased the amplitude of synaptic responses, while hexobendine had a depressant effect. This suggests that the edogenous release of adenosine from the preparation is sufficient to exert a tonic inhibitory influence on the amplitude of synaptic responses. Cyclic adenosine 3',5'-monophosphate (cAMP) and its dibutyryl derivative had depressant effects on the amplitude of field responses which were blocked by theophylline, suggesting that they are able to act at the extracellular adenosine recep-

tor. Results provide strong support for the concept of a neuromodulatory role for adenosine in the CNS. 50 references. (Author abstract modified)

000081 Dwivedi, Chandradhar; Misra, Radhey S.; Chaudhari, Anshumali; Parmar, Surendra S. Dept. of Pediatrics, Meharry Medical College, Nashville, TN **Correlation between monoamine oxidase inhibitors and anticonvulsants.** Journal of the National Medical Association. 72(10):953-955, 1980.

Monoamine oxidase (MAO) inhibitory and anticonvulsant properties of 2 substituted styryl-6-bromo-3-(4-ethylbenzoate/4 benzyhydrazide)-4-quinazoles were examined in vitro in rat brain and in vivo in albino mice with pentylenetetrazol-induced seizures. All styryl quinazolone esters, except compound 9, exhibited MAO inhibitory properties during oxidative deamination of kynuramine. Corresponding hydrazides were found to have relatively higher activity. All these quinazolones were able to protect against induced seizures. These observations, in general, do not prove that MAO inhibitory properties represent the biochemical basis for the anticonvulsant activity of these compounds. (Author abstract modified)

000082 Ebara, Takashi; Smith, Donald F. Dept. of Neuropsychiatry, Okayama Medical School, Okayama, Japan **Lithium levels in blood platelets, serum, red blood cells and brain regions in rats given acute or chronic lithium salt treatments.** Journal of Psychiatric Research. 15(3):183-188, 1979.

Experiments were carried out on rats given lithium (Li) (1-4mmol/kg/day) to determine the relationship between the Li level in blood platelets compared to serum, red blood cells and brain regions. In acute studies, the time course of the platelet Li content resembled the changes in the Li level in serum more than in red blood cells and brain. In chronic studies, the correlations between the Li level in platelets and the Li levels in serum, red blood cells, and brain regions ranged from 0.81 to 0.86 and were lower than the correlations between the Li levels in serum and in red blood cells and brain regions. The findings suggest that there may be differences in the membrane transport of Li in blood platelets compared to red blood cells and brain. 23 references. (Author abstract)

000083 Ebstein, Richard P.; Pickholz, Dalia; Sternberg, Scot; Strajelevich, David; Belmaker, Robert H. Jerusalem Mental Health Center-Ezrath Nashim, P.O.B. 140, Jerusalem, Israel **Chronic high dose propranolol does not increase dopamine receptor number.** Journal of Pharmacy and Pharmacology. 31(12):860-861, 1979.

The effects of chronic treatment with propranolol, haloperidol, and lithium on the number and affinity of striatal dopamine (DA) receptors were studied in male Sabra rats. No changes in the number or affinity of striatal DA receptors were observed after 3 or 6 weeks of treatment with high doses of propranolol. A significant increase in receptor number was observed after 3 weeks of propranolol in combination with haloperidol, but this increase did not differ significantly from that observed after treatment with haloperidol alone. DA receptor number and affinity were not altered by 6 weeks of lithium treatment. Results suggest that the possible antischizophrenic effects of propranolol are mediated by brain dopaminergic mechanisms. 18 references.

000084 Eckernas, Sven-Ake; Bohlin, Lars; Sahlstrom, Lena. Dept. of Neurology, University Hospital, Fack, S-75014 Uppsala, Sweden **Inhibition of brain synaptosomal uptake of choline by some 2-carboxamidostrychnine derivatives with muscle-relaxant properties.** Acta Pharmacologica et Toxicologica. 47(2):81-83, 1980.

Strychnine and some 2-carboxamido derivatives with peripheral muscle relaxant effects in vivo and in vitro were tested for ability to inhibit choline (Ch) uptake into mouse brain synaptosomes. Strychnine and some of the derivatives showed noncompetitive inhibition of high affinity Ch uptake. It is suggested that strychnine and its derivatives may alter the nerve cell membrane and thereby disturb mechanisms of transport into the nerve terminals. 5 references. (Author abstract modified)

000085 Eisenberg, Richard M.; Sparber, Sheldon B. School of Medicine, University of Minnesota, Duluth, MN 55812 **Changes in plasma corticosterone levels as a measure of acute dependence upon levorphanol in rats.** Journal of Pharmacology and Experimental Therapeutics. 211(2):364-369, 1979.

Acute administration of levorphanol (tartrate (LT) to male Sprague-Dawley rats caused an elevation in circulating corticosterone levels. Naloxone significantly elevated plasma corticosterone in rats pretreated with LT, but not in those pretreated with saline. When the two drugs were given simultaneously, naloxone suppressed the plasma corticosterone increase normally induced by acute LT. Naloxone caused a withdrawal response in rats treated with LT, but subsequent naloxone administration did not elicit the withdrawal response. 26 references. (Author abstract modified)

000086 Eliander, H.; Pekkarinen, A. Dept. of Pharmacology, Institute of Biomedicine, University of Turku, Kiinamyllynkatu 10, SF-20520 Turku 52, Finland **Enzyme inducing effects of phenobarbital on nitrazepam metabolism in dogs.** Acta Pharmacologica et Toxicologica. 47(3):171-174, 1980.

Phenobarbital had an enzyme inducing effect on the pharmacokinetics of nitrazepam in beagle dogs. After oral treatment with phenobarbital for 6 to 11 days, the area under the curve (AUC) and concentration maximum (Cmax) for a single dose of nitrazepam (1.5mg/kg) clearly decreased and the elimination constant increased. No sign of autoinduction of nitrazepam was seen in dogs treated with nitrazepam for 12 days, but the AUC and Cmax tended to increase in animals treated with nitrazepam for 24 or 61 days. 17 references.

000087 Engel, Jorgen; Lundborg, Per. Dept. of Pharmacology, University of Goteborg, Fack, S-400 33 Goteborg, Sweden **Increased mesolimbic 3H-spiroperidol binding in 4 week old offspring of nursing rat mothers treated with penfluridol.** European Journal of Pharmacology. 60(4):393-395, 1979.

Limbic and striatal binding of 3H-spiroperidol was studied in 4-week-old offspring of Sprague-Dawley rats treated with the dopamine receptor antagonist penfluridol during lactation. The specific binding of 3H-spiroperidol to limbic forebrain membranes was 30% higher in offspring of the penfluridol treated rats than in offspring of glucose controls. No significant differences between the two groups were seen for specific 3H-spiroperidol binding to striatal membranes. 5 references.

000088 Farris, Terry S.; Richards, Gail E. Dept. of Pediatrics, University of Texas Medical School, Houston, TX 77030 **Morphine acts through alpha adrenergic and serotoninergic neurons to stimulate growth hormone secretion in the dog.** Life Sciences. 27(14):1345-1349, 1980.

In the awake trained dog, morphine was found to cause a significant increase in growth hormone (GH), which was blocked by administration of metergoline and by simultaneous infusion of phentolamine. Haloperidol did not block morphine's effect on GH. Furthermore, when administered alone, haloperidol caused a significant increase in GH. It is concluded that alpha adrenergic and serotoninergic receptors play a role in morphine's stimulatory effect on GH. The role of dopamine (DA) receptors re-

quires further investigation. 29 references. (Author abstract modified)

000089 Ferrendelli, James A.; Blank, Ann C.; Gross, Robert A. Dept. of Pharmacology, Washington University School of Medicine, 660 South Euclid Ave., St. Louis, MO 63110 **Relationships between seizure activity and cyclic nucleotide levels in brain.** Brain Research. 200(1):93-103, 1980.

The effects of pentylenetetrazol on behavior, EEG activity and regional CNS levels of cyclic AMP and cyclic GMP in mice and guinea-pigs were studied. Pentylenetetrazol increased cyclic GMP levels in all regions of brain examined (cerebral cortex, hippocampus, striatum, and cerebellum) and increased cyclic AMP levels in all regions except the striatum. cGMP levels were increased by both subconvulsant and convulsant doses of pentylenetetrazol. In contrast, cyclic AMP levels were elevated only by concentrations of pentylenetetrazol that produced clinically evident seizures or epileptiform EEG activity. These data indicate that increases in CNS cyclic GMP levels produced by epileptogenic stimuli can occur independently of seizure discharges, whereas accumulation of cyclic AMP requires and is secondary to seizure activity. In conjunction with results of other studies, these data support the hypothesis that cyclic GMP may have a role in seizure genesis and/or propagation, whereas cAMP may be involved in processes that attenuate or terminate seizures. 24 references. (Author abstract modified)

000090 Ferrendelli, James A.; Kinscherf, Dorothy A. Dept. of Pharmacology, Washington University School of Medicine, 660 S. Euclid Ave., St. Louis, MO 63110 **Inhibitory effects of anticonvulsant drugs on cyclic nucleotide accumulation in brain.** Annals of Neurology. 5(6):533-538, 1979.

To examine the idea that anticonvulsant drugs can be distinguished by their molecular neuropharmacological actions, the effects of several of these drugs on cyclic nucleotide regulation in brain was tested in vitro. Veratridine caused depolarization of excitable cells and produced marked elevations of adenosine 3',5'-monophosphate (cyclic AMP) and guanosine 3',5'-monophosphate (cyclic GMP) levels in incubated slices of mouse cerebral cortex. Phenytoin, carbamazepine, phenobarbital, primidone, phensuximide, methsuximide, alpha-methyl-alpha-phenylsuccinimide, and high concentrations of clonazepam preferentially prevented maximal electroshock seizures (MES) and generalized tonic clonic convulsions. All these agents inhibited veratridine-induced accumulation of both cyclic AMP and cyclic GMP. Ethosuximide, trimethadione, valproic acid, and low concentrations of clonazepam were ineffective or inhibited accumulation of only cyclic GMP. The results suggest that inhibition of cyclic AMP and cyclic GMP accumulation is a molecular neuropharmacological action characteristic of anticonvulsant drugs that have direct effects on cellular membrane function and prevent MES. Anticonvulsant drugs that do not inhibit accumulation of both cyclic AMP and cyclic GMP exert their effects by altering neurotransmission mechanisms. 19 references. (Author abstract modified)

000091 Ferris, R. M.; Tang, F. L. M. Dept. of Pharmacology, Wellcome Research Laboratories, Research Triangle Park, NC 27709 **Comparison of the effects of the isomers of amphetamine, methylphenidate and deoxypipradrol on the uptake of l-(3H)norepinephrine and (3H)dopamine by synaptic vesicles from rat whole brain, striatum and hypothalamus.** Journal of Pharmacology and Experimental Therapeutics. 210(3):422-428, 1979.

S-()-amphetamine was 10 times as potent as its (R)-(-)-amphetamine in inhibiting the adenosine triphosphate/magnesium dependent uptake of (3H)dopamine and l-(3H)norepinephrine into purified synaptic vesicles of male Sprague-Dawley rat whole brain, striatum, or hypothalamus. In contrast, S-()-deoxypipradol and R-(-)-deoxypiprodrol were about equipotent as inhibitors of amine uptake into these preparations. The 1R:2R-enantiomer of methylphenidate was twice as potent as 1R:2S-methylphenidate. Results suggest that receptor sites on amine pumps in the membranes of all three vesicular preparations are sensitive to the stereochemical configuration around the alpha-carbon of amphetamine, but are not sensitive to the stereochemical configuration around the analogous carbon of deoxypiprodrol and methylphenidate. 17 references. (Author abstract modified)

000092 File, Sandra E.; Peet, Lynette A. Dept. of Pharmacology, School of Pharmacy, University of London, London, 29/39 Brunswick Square, London WC1N 1AX, England **The sensitivity of the rat corticosterone response to environmental manipulations and to chronic chlordiazepoxide treatment.** Physiology & Behavior. 25(5):753-758, 1980.

The sensitivity of the rat corticosterone response to environmental manipulations and to chronic chlordiazepoxide treatment was investigated. Rats that were exposed for 20 mins to an unfamiliar room had significant increases in plasma corticosterone concentrations, that were greater if the room was brightly lit than if it was dimly lit. Chlordiazepoxide significantly reduced the corticosterone response to a novel room, but was without effect on the levels in rats left undisturbed in the animal house. When pairs of rats were placed for 10 mins in an unfamiliar test box there was an increase in plasma corticosterone that was greater when the box was brightly lit; chloridazepoxide significantly reduced these corticosterone responses. In rats repeatedly exposed to the same apparatus, there was significant but not complete habituation of the corticosterone response in both singly tested rats and in those tested in pairs; manipulation of light levels no longer had a significant effect on the corticosterone levels. Chlordiazepoxide did not block the corticosterone response in these habituated rats. 35 references. (Author abstract modified)

000093 Fillion, G.; Beaudoin, D.; Rousselle, J. C.; Jacob, J. Service de Pharmacologie, Institut Pasteur, 28, rue du Docteur Roux, F-75015 Paris Cedex, France (3H)5-HT **binding sites and 5-HT-sensitive adenylate cyclase in glial cell membrane fraction.** Brain Research. 198(2):361-374, 1980.

(3H)Serotonin (5-HT) binding sites and 5-HT sensitive adenylate cyclase in glial cell membrane fractions were investigated via filtration techniques and cyclic AMP radioimmunoassay. Serotonin was found to bind to glial membrane fractions with an affinity corresponding to a dissociation constant Kd = 10 nM. The corresponding site is serotonergic specific: (3H)5-HT binding is inhibited by 5-HT agonists or antagonists and not inhibited by nonserotonergic drugs. The population of sites binding 5-HT present in neuronal membrane preparations and determined in parallel assays is distinct from that observed in glial preparations. The glial membrane fractions contains an adenylate cyclase activated by 5-HT with an apparent affinity constant close to 1mcM. It is serotonin specific and clearly distinct for the DA stimulated adenylate cyclase present in the same preparation. 18 references. (Author abstract modified)

000094 Florence, James E.; Peters, Marvin A. Peters: Dept. of Pharmacology, Loma Linda University, Loma Linda, CA 92350 **Absorption of 14C-labeled methadone by portal and extraportal venous circulations following intraperitoneal and introduodenal administration.** Journal of Pharmacology and Experimental Therapeutics. 211(1):145-150, 1979

The absorption of radiolabeled methadone after intraduodenal (i.d.) and i.p. administrations were compared in male Sprague-

Dawley rats. The rate of methadone absorption into portal and extraportal blood was more rapid after i.p. administration, particularly in the extraportal venous system. Since methadone is effectively removed from the liver in one pass, the differences in absorption betweem i.p. and i.d. administration may have pharmacological significance. (Author abstract modified)

000095 Freedman, Robert; Taylor, David A.; Seiger, Ake; Olson, Lars; Hoffer, Barry J. Dept. of Psychiatry, C268, University of Colorado Medical Center, 4200 E. Ninth Ave., Denver, CO 80262 **Seizures and related epileptiform activity in hippocampus transplanted to the anterior chamber of the eye: modulation by cholinergic and adrenergic input.** Annals of Neurology. 6(4):281-295, 1979.

Transplants of rat hippocampus into the anterior chamber of the eye of a host animal were used to assess the effects of cholinergic and adrenergic neuronal inputs on the generation and duration of seizure activity. Cholinomimetics initiated both seizures and hypersynchronous neuronal activity in the transplants. Cyclic guanosine monophosphate (GMP) derivatives and isobutyl methylxanthine elicited similar changes. Reflex activation of the cholinergic parasympathetic input to the iris and transplant by illumination of the ipsilateral retina also induced seizures or increased the rate of penicillin-induced interictal spike discharge. Application of beta adrenergic agonists inhibited interictal spikes and paroxysmal depolarizing shifts induced by penicillin. Fluorescence histochemical studies showed that host sympathetic adrenergic fibers derived from the ground plexus of the iris invaded the transplant to form varicose nerve terminals. Activation of these adrenergic afferents to the transplant diminished both the amplitude and frequency of penicillin-induced epileptiform activity. Epileptiform activity in hippocampal ocular transplants was strongly modulated by cholinergic and adrenergic neuronal inputs, with the former exerting a facilatory influence and the latter, an inhibitory effect. 50 references. (Author abstract modified)

000096 Frey, H. -H.; Loscher, W. Laboratory of Pharmacology and Toxicology, School of Veterinary Medicine, Free University, Berlin, Germany **Pharmacokinetics of carbamazepine in the dog.** Archives Internationales de Pharmacodynamie et de Therapie. 243(2):180-191, 1980.

The pharmacokinetics of carbamazepine were studied in dogs after oral administration of two pharmaceutical preparations. Absorption was rapid; however, the drug was much better absorbed from a liquid preparation than from tablets. Plasma concentrations declined with an elimination half life of 1.5 hr. Carbamazepine-10,11-epoxide, was rapidly formed and reached plasma concentrations higher than those of the mother compound. The concentrations of the epoxide remained high as long as plasma concentrations of carbamazepine were above 2 to 4nmole/ml, then they fell with an average half life of 2.2 hr. During continued treatment with daily doses of 0.34 to 0.38 mmole/kg carbamazepine, plasma concentrations showed a pronounced and progressive decline from Day 2 which is considered as the result of induction of microsomal liver enzymes. Carbamazapine and the epoxide pass into CSF at a rate comparable to that of phenobarbital or barbital and primidone, respectively. It is reported that binding to serum proteins was about 70% for carbamazepine and 40% for the epoxide in dog serum; slightly higher values were found for human serum. 27 references. (Author abstract modified)

000097 Frey, H.-H; Gobel, W.; Loscher, W. Laboratory of Pharmacology and Toxicology, School of Veterinary Medicine, Free University, Berlin-West, Germany **Pharmacokinetics of primidone and its active metabolites in the dog.** Archives Internationales de Pharmacodynamie et de Therapie. 242(1):14-30, 1979.

The metabolism of primidone and the pharmacokinetics of the drug as well as its metabolites, phenobarbital and phenylethylmalonic acid diamide (PEMA), was studied in dogs after a single oral dose. Primidone was rapidly absorbed so that maximal serum concentrations were reached after 2 hours, the concentration fell then with a half-life averaging 5 hours in beagles and 10 hours in mongrels. PEMA reached maximal concentrations after about 6.5 hours in beagles and 12 hours in mongrels. The elimination half-life averaged 7.5 hours in beagles and 14 hours in mongrels. During continued treatment with daily doses of primodone, steady state concentrations were reached after 6 to 8 days, the PEMA concentrations showed rather pronounced fluctuations around average values. The anticonvulsant potency of the drugs was also determined in mice. It is suggested that because of the similarities in metabolism and pharmacokinetics of primidone in dog and man, the former species seems to be a suitable model in epilepsy research. Differences between both species are most pronounced in the beagle. 37 references. (Author abstract modified)

000098 Fujimoto, Sunao; Yamamoto, Koji; Kuba, Kenji; Morita, Kiichiro; Kato, Eiji. Kuba: Dept. of Physiology, Saga Medical School, Saga 840-01, Japan **Calcium localization in the sympathetic ganglion of the bullfrog and effects of caffeine.** Brain Research. 202(1):21-32, 1980.

The localization of Ca2 in the bullfrog sympathetic ganglion was studied using electron microscopy with Oschman and Wall's technique, and the effects of caffeine on electrophysiological activity of the sympathetic ganglion were assessed. When the ganglion was incubated and processed in an extremely high Ca2 solution for electron microscopy, electron dense deposits were found at or in the plasma membranes, subsurface cisterns, and mitochondria of the postganglionic neurons. Addition of caffeine to the incubation media and fixatives caused a drastic decrease in number of these deposits in the subsynaptic membranes and subsurface cisterns. Caffeine prolonged the afterhyperpolarization of an action potential, reduced the amplitude of the ACh (nicotinic) potential, and induced slow rhythmic hyperpolarizations in a Ca2 solution. 33 references. (Author abstract modified)

000099 Fujita, Norihisa; Saito, Kihachi; Hirata, Akira; Iwatsubo, Katsuya; Noguchi, Yutaka; Yoshida, Hiroshi. Saito: Dept. of Pharmacology I, Osaka University School of Medicine, Nakanoshima 4-3-57, Osaka 530, Japan **Effects of dopaminergic agonists and antagonists on (3H)apomorphine binding to striatal membranes: sulpiride lack of interactions with positive cooperative (3H)apomorphine binding.** Brain Research. 199(2):335-342, 1980.

The effects of dopaminergic agonists and antagonists on (3H)apomorphine binding to striatal membranes of rat brain was examined. The inhibition of (3H)apomorphine binding with the Hill coefficient of 0.4 which was shown by haloperidol and spiroperidol was not observed for sulpiride and metoclopramide. Sulpiride inhibited noncooperative (3H)apomorphine binding leaving that with allosteric properties unaffected. No inhibition of dopamine sensitive adenylate cyclase was observed by sulpiride while 90% inhibition was obtained with haloperidol. It is suggested that noncooperative (3H)apomorphine binding is not coupled with dopamine sensitive adenylate cyclase. 15 references. (Author abstract modified)

000100 Fuller, Ray W.; Hemrick-Luecke, Susan K. Lilly Research Laboratories, Eli Lilly and Co., Indianapolis, IN 46285 **Depletion of epinephrine in rat hypothalamus by Ro 4-1284: influ-**

ence of pargyline and harmaline. Brain Research Bulletin. 5(5):589-591, 1980.

The role of type-A monoamine oxidase (MAO) in oxidizing epinephrine in rat brain was investigated via administration of Ro 4-1284, a compound known to deplete brain amines like norepinephrine and serotonin. Ro 4-1284 depleted epinephrine and norepinephrine in rat hypothalamus; the depletion occurred within 1 hr and persisted at 24 h. The rapid lowering of epinephrine by Ro 4-1284 was antagonized by pargyline, a monoamine oxidase inhibitor, which alone elevated epinephrine concentration. The ability of pargyline to antagonize epinephrine depletion by Ro 4-1284 was prevented by cotreatment with harmaline, which protects against type-A but not type-B MAO inhibition by pargyline. Pargyline also antagonized the Ro 4-1284-induced depletion of norepinephrine in hypothalamus and of norepinephrine and dopamine in cerebral hemispheres, and these effects of pargyline were also prevented by cotreatment with harmaline. Results suggest that epinephrine in rat brain, like norepinephrine and dopamine, is destroyed primarily by MAO-A. 11 references. (Author abstract modified)

000101 Fuller, Ray W.; Snoddy, Harold D. Lilly Research Laboratories, Eli Lilly and Co., Indianapolis, IN 46285 **Comparative effects of p-chloroamphetamine and l-(p-chlorophenyl)piperazine on 5-hydroxyindole concentration in rat brain.** Research Communications in Chemical Pathology and Pharmacology. 29(1):201-204, 1980.

p-Chloroamphetamine (PCA) decreased the concentration of serotonin (5-HT) and 5-hydroxyindoleacetic acid (5-HIAA) in male Wistar rat brain 6 hours, 24 hours, and 1 week after treatment. A structural analogue of PCA, l-(p-chlorophenyl)piperazine (PCPP) increased 5-HT and decreased 5-HIAA in rat brain 6 hours after treatment. Brain 5-HIAA and 5-HT concentrations were normal 24 hours and 1 week after PCPP. Results show that PCPP does not share the ability of PCA to deplete brain 5-hydroxyindoles. 7 references. (Author abstract modified)

000102 Galdames, D. G.; Saavedra, I. N.; Ortiz, M. A.; Aguilera, L. I.; Valenzuela, A. L.; Concha, G. L.; Droguett, P. A.; Morales, E. R. Depto. Neurologia, Hospital Jose Joaquin Aguirre, Santos Dumontt 999, Santiago, Chile **Plasma levels of diphenylhydantoin and the control of adult epileptic seizures: a Chilean experience.** Epilepsia. 21(5):467-474, 1980.

In a prospective study of 117 Chilean adult ambulatory patients, 110 of whom were epileptics treated only with oral diphenylhydantoin (DPH), plasma levels of this drug were determined by gas-liquid chromatography. The average followup time was 6 months (range, 3 to 13 months); satisfactory control of seizures was obtained with plasma levels in the 10.2 to 25.8mcg/ml range, representing 68% of the patients whose seizures had been controlled. The dosage received by this group was from 4.2 to 6mg/kg, with an average of 5.1. In general, these results agree with those found in European or North American patients, even though some differences or little clarity in the methodology of other trials make comparison difficult. This similarity of results suggests that genetic or environmental differences do not alter response to DPH, but further studies are necessary in this area. Results can serve as a basis for extrapolation of data about DPH coming from other latitudes that have been considered supposedly valid for Latin-American epileptic patients. 30 references. (Author abstract)

000103 Gallager, Dorothy W.; Mallorga, Pierre; Thomas, John W.; Tallman, John F. Connecticut Mental Health Center, 34 Park Street, New Haven, CT 06508 **GABA-benzodiazepine interactions: physiological, pharmacological and developmental aspects.** Federation Proceedings. 39(12):3043-3049, 1980.

Physiological, pharmacological, and developmental investigations of GABA/benzodiazepine interactions are reviewed. Electrophysiological studies on dorsal raphe neurons indicate that the benzodiazepines act postsynaptically to potentiate GABAergic inhibition in this midbrain nucleus. Direct binding studies have shown that both in vitro and in vivo binding of (3H)diazepam to a specific high affinity benzodiazepine binding site in cerebral cortical tissue are enhanced by the direct in vitro addition of GABA and GABA agonists or by pretreatment of animals with GABA analogs and agents that elevate GABA levels in brain. Ontogenic development of (3H)diazepam binding in brain parallels the development of the sodium independent (3H)GABA binding. The ability of GABA to enhance benzodiazepine binding is present throughout development and inversely related to age. These data suggest that there is a functionally significant interaction between the benzodiazepines and GABA throughout development and at maturity. A model is proposed to relate these interactions to conformational changes in benzodiazepine/GABA/Cl- ionophore complex. 61 references. (Author abstract modified)

000104 Galli, A.; Renzi, G.; Bartolini, A.; Bartolini, R.; Malmberg-Aiello, P. Dept. of Pharmacology, University of Florence, Viale Morgagni 65, I-50134 Florence, Italy **Inhibition of (3H)naloxone binding in homogenates of rat brain by eseroline, a drug, with analgesic activity, related to physostigmine.** Journal of Pharmacy and Pharmacology. 31(11):784-786, 1979.

The inhibitory effects of eseroline, physostigmine, and morphine on the stereospecific binding of (3H)naloxone to homogenates of rat brain were compared. Results showed that eseroline interacts with naloxone binding sites in rat brain in the presence of sodium at pharmacologically active concentrations. Its parent molecule, physostigmine, showed affinity for naloxone binding sites only at concentrations several orders of magnitude higher than those required for analgesia. Eseroline was much weaker than morphine in inhibiting (3H)naloxone binding, even though the two drugs are nearly equipotent as analgesics. 17 references.

000105 Galzigna, L.; Manani, G.; Bianchi, M.; Pittoni, G.; Bossi, M; Giron, G. P.; Costa, G.; Civran, E.; Aspes, F. Manani: Istituto di Anestesiologia e Rianimazione dell'Universita de Padova, I-35100 Padua, Italy **Some experimental effects with trazodone.** Agressologie. 20(4):211-216, 1979.

The effects of trazodone treatment were studied in order to evaluate mechanisms involved with the drug's metabolism. The effects of trazodone were noted in the following areas: isolated ileum of rabbit, microsomal oxidative activity of orcinol in liver microsomes of rats, and the pentobarbital-induced sleeping time in rats. The results on isolated ileum of rabbit appear to confirm that trazodone activates VOD and moreover, that this activation plays an important role in warranting a greater disposability of NADPH-2 to the processes of microsomal biodegradation of orcinol. The increase in pentobarbitual induced sleeping time in rats pretreated with trazodone is ascribed to the inhibition of serotonin brain uptake. 22 references. (Author abstract)

000106 Gee, Kelvin W.; Hollinger, Mannfred A.; Bowyer, John F.; Killam, Eva K. Dept. of Pharmacology, School of Medicine, University of California, Davis, CA 95616 **Modification of dopaminergic receptor sensitivity in rat brain after amygdaloid kindling.** Experimental Neurology. 66(3):771-777, 1979.

Alterations in dopaminergic receptor sensitivity were observed in various areas of male Sprague-Dawley rat brain after the kindling of seizures by repeated amygdala stimulation. Ra-

dioligand binding assays with (3H)spiroperidol as ligand and butaclamol as specific antagonist in crude brain homogenates showed that high and low affinity receptor sites were differentially affected in various brain regions with respect to density of sites as well as affinity for ligand. Altered dopaminergic receptor sensitivity may have a role in epileptogenesis. 22 references. (Author abstract modified)

000107 Geller, Herbert M.; Hoffer, Barry J.; Taylor, David A. Dept. of Pharmacology, CMDNJ-Rutgers Medical School, Piscataway, NJ 08854 **Electrophysiological actions of benzodiazepines.** Federation Proceedings. 39(12):3016-3023, 1980.

The research literature on the mechanism underlying the CNS depressant effect of benzodiazepines (via increased GABA mediated inhibition) is reviewed. This increase in inhibition may result from benzodiazepines increasing the activity of some GABAergic neurons and also from modulatory action of benzodiazepines on GABA actions at some postsynaptic receptor sites. The modulatory action is observed with doses of benzodiazepines that do not cause any direct effects on neuronal excitability or membrane polarization. Specificity tests indicate that benzodiazepines do not enhance inhibition mediated by glycine or monoamines such as norepinephrine or serotonin. Results of experiments with a convulsant benzodiazepine compound, which causes a specific reduction in GABA mediated inhibition, are also present. The data are discussed in terms of a model in which the benzodiazepine receptor, the GABA receptor, and the chloride ionophore are functionally linked. It is proposed that some postsynaptic actions of GABA may be continually regulated by the occupancy of a benzodiazepine receptor, and that occupancy of the benzodiazepine receptor may be permissive for the GABA elicited in chloride ion permeability. 43 references. (Author abstract modified)

000108 Gibson, Alan; Samini, Morteza. Dept. of Pharmacology, Chelsea College, University of London, London, SW3 6LX, England **The effects of bromocriptine on pre-synaptic and post-synaptic alpha-adrenoceptors in the mouse vas deferens.** Journal of Pharmacy and Pharmacology. 31(12):826-830, 1979.

Bromocriptine produced a noncompetitive antagonism of the contractile responses to noradrenaline (NA) and dopamine in the mouse vas deferens, but had no effect on responses to carbachol. Bromocriptine also reduced single twitch responses of the vas to low frequency field stimulation (0.1 Hz), but did not affect responses to stimulation at higher frequencies. Yohimbine selectively and rapidly reversed the inhibiting effects of bromocriptine on single twitches. Bromocriptine produced a yohimbine reversible reduction in the stimulated overflow of tritium from vasa previously loaded with tritiated NA. Results suggest that bromocriptine acts as a presynaptic alpha-adrenoceptor agonist and postsynaptic alpha-adrenoceptor antagonist in this tissue. 27 references. (Author abstract modified)

000109 Gintzler, Alan R. Dept. of Anatomy, Columbia University College of Physicians and Surgeons, 630 W. 168th St., New York, NY 10032 **Serotonin participation in gut withdrawal from opiates.** Journal of Pharmacology and Experimental Therapeutics. 211(1):7-12, 1979.

The role of serotonin in mediating naloxone precipitated withdrawal was studied in gut preparations from morphine tolerant/dependent guinea-pigs. Naloxone-induced contracture in these preparations was completely blocked by pretreatment with tetrodotoxin, but only partially blocked by atropine. The atropine resistant portion of the naloxone-induced contracture could be blocked by pretreatment with serotonin. Naloxone also increased the rate of (3H)serotonin release from the tolerant/dependent ilea. In naive ilea, serotonin itself produced a tetrodotoxin sensitive, atropine resistant contrature which was blocked by morphine in a naloxone reversible fashion. (Author abstract modified)

000110 Godefroy, Francoise; Weil-Fugazza, Jeanne; Coudert, Danielle; Besson, Jean-Marie. Unite de Recherches de Neurophysiologie Pharmacologique, del'INSERM (U. 161), 2, rue d'Alesia, F-75014 Paris, France **Effect of acute administration of morphine on newly synthesized 5-hydroxytryptamine in spinal cord of the rat.** Brain Research. 199(2):415-424, 1980.

The effect of morphine on the rate of (3H)5-hydroxytryptamine (5-HT) synthesis in brain and spinal cord following intravenous injection of (3H)tryptophan was studied in the rat. In the spinal cord and forebrain, morphine induced an increase in (3H)tryptophan uptake and a clear enhancement of the formation of (3H)5-HT. Increases in (3H)5-HT synthesis rate were suppressed by naloxone, but naloxone did not reduce the increased accumulation of (3H)tryptophan in brain and spinal cord induced by morphine treatment. Results demonstrate that morphine induces a fast and marked increase in 5-HT synthesis, and suggest that this increase is only partly related to an increase in the availability of tryptophan to the CNS. Results are in good agreement with recent investigations showing the involvement of the raphe/spinal system in morphine analgesia. 41 references. (Author abstract modified)

000111 Gothert, M.; Huth, H. Pharmakologisches Institut der Universitat Essen, Hufelandstr. 55, D-4300 Essen 1, West Germany **Alpha-adrenoceptor-mediated modulation of 5-hydroxytryptamine release from rat brain cortex slices.** Naunyn-Schmiedeberg's Archives of Pharmacology. 313(1):21-26, 1980.

The electrically evoked overflow of 3H-5-hydroxytryptamine (3H-5-HT) from preloaded slices of male Wistar rat brain cortex was decreased by noradrenaline (NA) and increased by phentolamine in a concentration dependent manner. The inhibitory effect of NA was blocked by phentolamine, but not by propranolol. Phentolamine also abolished the inhibitory effect of cocaine on evoked 3H overflow. Results suggest that the inhibition of 3H-5-HT release by NA is mediated by activation of alpha-adrenoceptors on the terminal serotonergic fibers of the brain cortex. 21 references. (Author abstract modified)

000112 Green, Jack Peter; Maayani, Saul; Weinstein, Harel; Hough, Lindsay B. Dept. of Pharmacology, Mount Sinai School of Medicine, New York, NY **Histamine and psychotropic drugs.** Psychopharmacology Bulletin. 16(1):36-38, 1980.

The histamine H2-linked adenylate cyclase in guinea pig hippocampal and cortical homogenates was examined as a site of action of psychotropic drugs. Of all the compounds tested, the one with the highest affinity for the H2-receptor was cyproheptadine. Both D-LSD and 2-bromo-LSD, but not L-LSD, competitively blocked the H2-linked cyclase. All tricyclic antidepressant drugs tested blocked the H2-stimulated adenylate cyclase in a competitive manner. Neuroleptic agents also competitively blocked the histamine stimulated adenylate cyclase. It is concluded that the H2-receptor is sensitive to drugs with different gross behavioral effects in a manner like that of the dopamine receptor. Pharmacological effects attributable to blockade of the H2-receptor are considered. 9 references.

000113 Greenberg, Louise H.; Weiss, Benjamin. Dept. of Pharmacology, Medical College of Pennsylvania, 3300 Henry Ave., Philadelphia, PA 19129 **Ability of aged rats to alter beta adrenergic receptors of brain in response to repeated administration of reserpine and desmethylimipramine.** Journal of Pharmacology and Experimental Therapeutics. 211(2):309-316, 1979.

Repeated administration of reserpine to 3-month-old Fischer-344 rats produced dose related increases in (3H)dihydroalprenolol (DHA) binding in pineal gland, cerebral cortex, and cerebellum, reflecting an increase in the density of beta-adrenergic receptors in these areas. The ability to increase receptor density in response to reserpine treatment was impaired in 24-month-old rats. Repeated administration of desmethylimipramine decreased DHA binding in pineal glands and cerebral cortex, but not in the cerebellum, of 3 and 24-month-old rats. 57 references. (Author abstract modified)

000114 Greenblatt, David J.; Ochs, Hermann R.; Lloyd, Brian L. Division of Clinical Pharmacology, Box 1007, New England Medical Center Hospital, 171 Harrison Avenue, Boston, MA 02111 **Entry of diazepam and its major metabolite into cerebrospinal fluid.** Psychopharmacology. 70(1):89-93, 1980.

The entry of diazepam (DZ) and its major metabolite, desmethyldiazepam (DMDZ), into cerebrospinal fluid (CSF) were assessed following a single 1.0mg/kg i.v. dose of diazepam to five dogs. Diazepam was rapidly eliminated from plasma; DZ disappearance was mirrored by formation of DMDZ, which in turn, was eliminated slowly. Both DZ and DMDZ rapidly penetrated CSF and concentrations in CSF declined parallel with those in plasma. Despite rapid uptake, the extent of CSF transfer of DZ and DMDZ was limited by plasma protein binding. Mean CSF plasma concentration ratios for DZ and DMDZ were significantly correlated with the unbound fraction in plasma. Thus DZ and DMDZ concentrations in CSF, presumed to reflect concentrations at the site of action, are determined by unbound plasma concentrations. The intensity of pharmacologic action is more likely to correlate with unbound than with total plasma concentrations. 23 references. (Author abstract modified)

000115 Gross, Robert A.; Ferrendelli, James A. Ferrendelli: Dept. of Neurology, Washington University School of Medicine, 660 S. Euclid Ave., St. Louis, MO 63110 **Effects of reserpine, propranolol, and aminophylline on seizure activity and CNS cyclic nucleotides.** Annals of Neurology. 6(4):296-301, 1979.

The effects of reserpine, propranolol, aminophylline, and other drugs on pentylenetetrazol-induced seizure behavior and on changes in cyclic adenosine monophosphate (AMP) and cyclic guanosine monophosphate (GMP) levels were examined in the hippocampus and cerebral cortex of mice. Convulsant doses of pentylenetetrazol incresed levels of both cyclic AMP and cyclic GMP. In animals pretreated with reserpine, propranolol, or aminophylline, pentylenetetrazol seizures were more severe, cyclic AMP elevations were attenuated or blocked, and cyclic GMP increases were unaffected or augmented. These data indicate that norepinephrine, adenosine, and perhaps other biogenic amines have a regulatory effect on cyclic AMP, but not cyclic GMP, levels in epileptic brain. An increased level of cyclic AMP in brain tissue may have an antiepileptic effect leading to seizure attenuation or termination. By contrast, elevated levels of cyclic GMP may have an epileptogenic effect in initiating or maintaining seizure activity. 27 references. (Author abstract modified)

000116 Gruol, D. L.; Barker, J. L.; Smith, T. G. A. V. Davis Center, Salk Institute, P.O. Box 85800, San Diego, CA 92138 **Naloxone antagonism of GABA-evoked membrane polarizations in cultured mouse spinal cord neurons.** Brain Research. 198(2):323-332, 1980.

The effects of naloxone on neuronal membranes were investigated via pharmacological manipulations using an in vitro model system, and these effects were compared to the opiate receptor antagonist effects of naloxone. When naloxone was coadministered (iontophoretically) with the amino acids to mammalian spinal cord neurons, a dose dependent and reversible depression of the GABA response resulted. The naloxone depression of the GABA response did not appear to involve opiate receptors since ()naloxone, the inactive isomer, equally depressed the GABA response. Analysis of the effect of naloxone on GABA dose response curves indicates that naloxone acts as a competitive antagonist at the neuronal GABA receptors. The data indicate that under some experimental conditions, naloxone can not be considered a specific opiate antagonist. 21 references. (Author abstract modified)

000117 Guerrero-Munoz, Federico; Guerrero, M. De Lourdes; Way, E. Leong. Way: Dept. of Pharmacology, University of California, School of Medicine, San Francisco, CA 94143 **Effect of morphine on calcium uptake by lysed synaptosomes.** Journal of Pharmacology and Experimental Therapeutics. 211(2):370-374, 1979.

Morphine decreased the uptake of labeled calcium ions (45Ca) into lysed synaptosomes from homogenates of whole male CD1 mouse brain, but only in the presence of ATP. In contrast, the uptake of 45Ca into lysed synaptosomes was enhanced in the presence of ATP in morphine dependent mice, and this increase was related to the degree of tolerance and dependence. Naloxone antagonized the effects of morphine on 45Ca uptake in vivo and in vitro. Results support the proposed role of Ca flux in morphine analgesia, tolerance, and physical dependence. 21 references. (Author abstract modified)

000118 Hackenberg, P. Dept. of Neuropathology, District Hospital of Neuropsychiatry, DDR-27 Schwerin, Germany **Incorporation of 4.5-3-H-leucine into the limbic system of ICR mice as a long-term effect of haloperidol application.** Psychopharmacology. 70(1):105-108, 1980.

The incorporation of 3-H-4.5 leucine into the limbic system (Ncl. amygdaloideus lateralis, gyrus dentatus) of ICR mice following haloperidol treatments lasting 4 weeks and 4 months was observed, and results are compared with those obtained by treatment for 10 days. Protein incorporated activity was significantly elevated throughout treatment, but there were no significant differences between the treated and control animals 4 weeks after treatment had ended. Although the mechanism causing the differences during treatment is unknown, the results demonstrate that even long-term haloperidol treatment is accompanied by alteration (during which some tolerance is developed) of the protein and/or amino acid metabolism which can contribute to neuronal decompensation. 40 references. (Author abstract modified)

000119 Hadzhikostova, H.; Visheva, N.; Milanov, S.; Nikolov, N. Central Radioisotope Laboratory, Biomedical Institute, Sofia, Bulgaria **Changes of ACTH, STH, TSH and prolactin levels in endotoxin shock in rats.** Agressologie. 20(4):203-206, 1979.

Modifications of the ACTH, STH, TSH and prolactin levels following endotoxin shock was studied. The sample consisted of 93 albino Wistar rats with a mean weight of approximately 174 grams. Using a radioimmune method, the plasma levels of ACTH (27 control animals and 47 in shock), STH (24 control and 41 in shock), TSH (17 control and 39 in shock) and prolactin (18 control and 43 in shock) were determined. Endotoxin shock was induced by intravenous injection of 10mg/kg E. coli endotoxin. Results show a rise in plasma ACTH and STH levels and a decrease in TSH and prolactin levels in rats in shock. 2 references. (Author abstract)

000120 Hall, Hakan; Sallemark, Maria; Ross, Svante B. Research and Development Laboratories, Astra Lakemedel AB, S-151 85 Sodertalje, Sweden **Clenbuterol, a central beta-adrenocep-**

tor agonist. Acta Pharmacologica et Toxicologica. 47(2):159-160, 1980.

Prolonged treatment with clenbuterol (0.2 or 1.0mg/kg, twice daily for 12 days) caused a significant decrease in beta-receptor density in cortical membranes of male Sprague-Dawley rats. A single 1mg/kg i.p. dose had no affect. The affinity of 3H-dihydroalprenolol for the receptors was not altered. Salbutamol and terbutaline had no significant effect on beta-receptors. Results suggest that clenbuterol passes into the brain and stimulates central beta-adrenoceptors. 9 references.

000121 Hammond, Donna L.; Levy, Richard A.; Proudfit, Herbert K. Neurosurgical Research, Medical Science Building, Mayo Clinic,. Rochester, MN 55901 **Hypoalgesia induced by microinjection of a norepinephrine antagonist in the raphe magnus: reversal by intrathecal administration of a serotonin antagonist.** Brain Research. 201(2):475-479, 1980.

The serotonin antagonist methysergide was injected into the spinal cord subarachnoid space of animals rendered hypoalgesic by prior microinjection in the nucleus raphe magnus (NRM) of the alpha-noradrenergic antagonist phentolamine to investigate whether serotonergic or nonserotonergic fibers mediate the phentolamine-induced hypoalgesia. Microinjection of phentolamine in the NRM produced hypoalgesia as assessed by both the tail flick and hotplate tests. The elevation of tail flick latency appears to result from activation of serotonergic raphe/spinal projections, while the elevation of hot plate latency appears to be mediated by activation of nonserotonergic raphe/spinal neurons and/or by activation of raphe neurons which project to supraspinal nuclei. 12 references. (Author abstract modified)

000122 Hammond, Donna L.; Levy, Richard A.; Proudfit, Herbert K. Dept. of Poharmacology, University of Illinois at the Medical Center, Chicago, IL 60612 **Hypoalgesia following microinjection of noradrenergic antagonists in the nucleus raphe magnus.** Pain. 9(1):85-101, 1980.

The influence of noradrenergic input to the nucleus raphe magnus (NRM) on the capacity of this nucleus to modulate nociceptive threshold was investigated in the rat by microinjection of noradrenergic (NA) antagonists in the NRM. The distribution of NA terminals associated with the NRM was visualized histochemically using a glyoxylic-acid-induced fluorescence technique. Microinjection of 5 and 10 microgram phentolamine at sites within the NRM, which was found to be densely innervated with NA terminals, was either ineffective or produced hypoalgesia only after a substantial delay. Similar results were observed following microinjection of 10.5 micrograms azapetine, another NA antagonist. The correspondence between the distribution of NA terminals associated with the NRM and the distribution of active sites for hypoalgesia in this area suggests that hypoalgesia was caused by blockade of the NA input to the NRM. These results indicate that those cells of the NRM involved in the modulation of nociceptive threshold are themselves subject to a tonic, inhibitory NA input, the suppression of which produces hypoalgesia. 51 references. (Author abstract)

000123 Hamon, M.; Bourgoin, S.; Artaud, F.: Glowinski, J. Groupe NB, INSERM U.114, College de France, 11, place Marcelin Berthelot, F-75231 Paris Cedex 05, France **The role of intraneuronal 5-HT and of tryptophan hydroxylase activation in the control of 5-HT synthesis in rat brain slices incubated in K-enriched medium.** Journal of Neurochemistry. 33(5):1031-1042, 1979.

The incubation of male Sprague-Dawley rat brainstem slices in a potassium (K) enriched medium containing the serotonin (5-HT) uptake inhibitor fluoxetine significantly increased their capacity to synthesize 5-HT from tryptophan. The K-induced stimulation of 5-HT synthesis was at least partly dependent on the depletion of 5-HT and was associated with an activation of tryptophan hydroxylase. It is suggested that the calcium influx produced by neuronal depolarization triggers the activity of a calcium dependent protein kinase capable of activating tryptophan hydroxylase. 43 references. (Author abstract modified)

000124 Harris, Douglas W.; Sethy, Vimala H. Sethy: Upjohn Co., CNS Research, Kalamazoo, MI 49001 **High affinity binding of (3H)ethylketocyclazocine to rat brain homogenate.** European Journal of Pharmacology. 66(1):121-123, 1980.

The binding of the kappa-receptor agonist ethylketocyclazocine (Ekc) to opiate receptor sites in male Sprague-Dawley rat brain homogenates was studied. The binding of (3H)Ekc was saturable, with a dissociation constant of 1.8nM and a maximum number of binding sites of 9.6pmol/g tissue in whole brain. Opiate agonists and antagonists showed a high affinity for (3H)Ekc binding sites, but could not be differentiated on the basis of their presumed specificity for mu or kappa receptors. 8 references. (Author abstract modified)

000125 Hartman, John A.; Halaris, Angelos E. Halaris: Dept. of Psychiatry, University of California, Los Angeles, CA 90024 **Compartmentation of catecholamines in rat brain: effects of agonists and antagonists.** Brain Research. 200(2):421-436, 1980.

The subsynaptosomal distributions of dopamine (DA) in striatum and of norepinephrine (NE) in hypothalamus and cerebral cortex were examined. Isolated nerve endings from each region were osmotically disrupted and subfractionated into a soluble cytoplasmic fraction (end supernatant, SE) and a synaptic vesicle fraction (P2V). DA and NE were measured in the crude homogenate and in subcellular fractions by a radioenzymatic assay. Levels of NE and DA were 3 to 5 times higher in the nerve ending cytoplasm than in the synaptic vesicles, suggesting that catecholamines within the nerve endings are predominantly in soluble form. The effects of amphetamine, pargyline, gamma-butyrolactone, 6-hydroxydopamine, alpha-methyltyrosine, and reserpine on DA and NE levels are described. The cytoplasmic storage compartment is discussed in terms of a possible anatomical correlate such as the smooth endoplasmic reticulum. 57 references. (Author abstract modified)

000126 Hemmingsen, R.; Holm-Jensen, J.; Trojaborg, W. .Dept. of Psychiatry, Psychochemistry Institute, Copenhagen, Denmark **The effect of propranolol on the electroencephalogram in normal and ethanol dependent rats.** Acta Pharmacologica et Toxicologica. 47(2):107-111, 1980.

EEGs were recorded from scalp electrodes placed on the cerebral hemispheres of rats treated with propranolol during ethanol withdrawal. There were no significant differences in EEG frequencies or amplitudes between abstinent animal and controls before and after propranolol (2mg/kg i.v.). No changes in EEG were seen during 3 minutes of photic stimulation. 27 references. (Author abstract modified)

000127 Herink, J.; Fusek, J.; Bajgar, J.; Hrdina, V. Purkyne Medical Research Institute, 502 60 Hradec Kralove, Czechoslovakia **The effect of diazepam on EEG changes following intraseptal administration of atropine.** Activitas Nervosa Superior. 21(3):184-185, 1979.

The effect of diazepam on EEG changes following intraseptal administration of atropine was investigated in Wistar rats. In the experimental group (n=6), diazepam was given intravenously about 10 minutes after the application of atropine; in the control group (n=6), only atropine was administered. Large amplitude intermittent spikes were observed in the hippocampus and amygdala approximately 10 minutes after intraseptal application

of atropine. Diazepam had a strong suppressive effect on the frequency of atropine spikes in the hippocampus and amygdala. It is hypothesized that the bodies of neurons responsible for the spikes are localized at the medial septal nucleus and that their axons end in the hippocampus and amygdala. 2 references.

000128 Hiller, Jacob M.; Simon, Eric J. Dept. of Psychiatry, New York University Medical Center, 550 First Avenue, New York, NY 10016 **3H-Ethylketocyclazocine binding: lack of evidence for a separate kappa receptor in rat CNS.** European Journal of Pharmacology. 60(4):389-390, 1979.

The properties and distribution of tritiated ethylketocyclazocine (EK) binding in rat brain and spinal cord were quite similar to those of other opiates. The relative potencies of EK and morphine in protecting against receptor inactivation by N-ethylmaleimide were the same when 3H-naltrexone or 3H-EK were used. These findings suggest that no separate kappa opiate receptor exists in the rat CNS. 5 references.

000129 Hokin-Neaverson, Mabel. Dept. of Psychiatry, University of Wisconsin, Madison, WI 53706 **Actions of chlorpromazine, haloperidol and pimozide on lipid metabolism in guinea pig brain slices.** Biochemical Pharmacology. 29(19):2697-2700, 1980.

The actions of chlorpromazine, haloperidol, and pimozide on lipid metabolism in guinea-pig brain slices were compared, and the relationship between these actions and their neuroleptic effects was examined. Their interactions with effects of norepinephrine and dopamine on phospholipid metabolism were also examined. Both chlorpromazine and haloperidol stimulated the synthesis of phosphatidylinositol that was measured by the incorporation of (2-3H)glucerol, (32P)phosphate, and (2-3H)myoinositol in guinea-pig brain slices, but pimozide had no effect. It is unlikely, therefore, that this effect of chlorpromazine and haloperidol on phospholipid metabolism plays a major role in the neuroleptic actions that are commone to these three drugs. There is no evidence that the increased synthesis of phosphatidylinositol involves a redirection of lipid synthetic pathways from the diacylglycerol pathway to the CDP-diacylglycerol pathway. Chlorpromazine and haloperidol appeared to block the effects of norepinephrine on phosphatidylinositol metabolism in cerebral cortex slices. The stimulation by these two drugs of (2-3H)myoinositol incorporation into phosphatidylinositol in corpus striatum slices was reduced in the presence of dopamine. 12 references.

000130 Hotchkiss, Adair; Gibb, James W. Gibb: Dept. of Biochemical Pharmacology and Toxicology, University of Utah, Salt Lake City, UT 84112 **Blockade of methamphetamine-induced depression of tyrosine hydroxylase by GABA transaminase inhibitors.** European Journal of Pharmacology. 66(2/3):201-205, 1980.

Chronic treatment with methamphetamine (10mg/kg every 6 hours for 24 hours) decreased the tyrosine hydroxylase (TH) activity in male Sprague-Dawley rat neostriatum to 70% of control, but this effect was blocked by the GABA transaminase inhibitors aminooxyacetic acid (20mg/kg i.p.) and gamma-acetylenic GABA (15mg/kg i.p.). A single intraventricular injection of ethanolamine-O-sulfate (400mcg) also prevented the methamphetamine-induced depression of TH. Results suggest that striatonigral or other GABA systems are involved in the regulation of nigrostriatal dopaminergic neurons and that enhanced GABA function can antagonize the effects of high doses of methamphetamine. 17 references. (Author abstract modified)

000131 Howland, Richard D.; Vyas, Ivy L.; Lowndes, Herbert E.; Argentieri, Thomas M. Dept. of Pharmacology, College of Medicine and Dentistry of New Jersey, New Jersey Medical School, Newark, NJ 07103 **The etiology of toxic peripheral neuropathies: in vitro effects of acrylamide and 2,5-hexanedione on brain enolase and other glycolytic enzymes.** Brain Research. 202(1):131-142, 1980.

The in vitro effects of the neurotoxic compounds, acrylamide and 2,5-hexanedione, on several glycolytic enzymes including enolase, phosphofructokinase (PFK), glyceraldehyde-3-phosphate dehydrogenase (GAPDH) and lactic dehydrogenase (LDH) were studied in rat brain. A differential sensitivity of the enzymes to the inhibitory effects of the neurotoxins was observed. The order of increasing sensitivity to 2,3-hexanedione was enolase/GAPDH/PFK and to acrylamide the order was PFK/enolase/GAPDH. Activity of enolase inhibited by both acrylamide and dithiothreitol could not be restored to preinhibition rates following dialysis, indicating that an irreversible interaction between acrylamide and enolase had taken place. Results suggest that neurotoxic compounds which produce distal axonopathies have a common pattern of attack on glycolytic enzymes and that interruption of glycolysis is the underlying biochemical basis for both the physiological and morphological damage caused by these compounds. 19 references. (Author abstract modified)

000132 Hruska, Robert E.; Ludmer, Lynn M.; Silbergeld, Ellen K. Neurotoxicology Section, NINCDS, NIH, Building 36, Room 4A22, Bethesda, MD 20205 **Hypophysectomy prevents the striatal dopamine receptor supersensitivity produced by chronic haloperidol treatment.** European Journal of Pharmacology. 65(4):455-456, 1980.

Dopamine (DA) receptor sensitivity was studied in intact and hypophysectomized male rats treated chronically with haloperidol (1.0mg/kg/day for 3 weeks). Chronic haloperidol injections increased the number of striatal DA receptors without altering their affinity. Hypophysectomy did not alter the number or affinity of striatal DA receptors in saline controls, but prevented the development of striatal DA receptor supersensitivity in rats treated with haloperidol. Results suggest that striatal DA receptor supersensitivity produced by chronic haloperidol depends on the presence of the pituitary. The possible role of prolactin in the development of neuroleptic-induced tardive dyskinesia is discussed. 5 references.

000133 Hruska, Robert E.; Silbergeld, Ellen K. Section of Neurotoxicology, Bldg. 36, Rm 4A22, NINCDS, NIH, Bethesda, MD 20205 **Cortical neurochemical changes after intrastriatal injection of kainic acid.** Brain Research. 191(2):572-576, 1980.

Cortical neurochemical changes after intrastriatal injection of kainic acid (KA) were investigated, and the validity of the intrastriatal injection of KA as an animal model of Huntington's disease (HD), was evaluated. Results suggest that the injection of KA into the striatum does not destroy axons or terminals of extrinsic neurons and confirms that this part of the model for HD is adequate. Results also suggest that the use of intrastriatal injection of KA as an animal model of HD may still be subject to some discussion. The loss of cortical cholinergic structures is not consistent with HD, since other reports have demonstrated normal choline acetyltransferase activity in the cortex of autopsied HD brains. 17 references.

000134 Hsu, Louise L.; Smith, Robert C.; Rolsten, Carolyn; Leelavathi, Doddamane E. Dept. of Psychiatry and Behavioral Sciences, University of Texas Medical Branch, Galveston, TX **Effects of acute and chronic phencyclidine on neurotransmitter enzymes in rat brain.** Biochemical Pharmacology. 29(18):2524-2526, 1980.

The effects of acute and chronic phencyclidine (PCP) on neurotransmitter enzymes, choline acetyltransferase (CAT), acetylcholinesterase (AChE), acetyle CoA hydrolase (AcCoA-H), and the GABA synthesizing enzyme glutamic acid decar-

boxylase (GAD) were investigated in several regions of rat brain. Single in vivo dose of PCP significantly affected the activities of two cholinergic enzymes, CAT and AChE, and the GABA synthesizing enzyme, GAD in some of the brain areas studied. After chronic PCP treatment, the changes in CAT and AChE activity seen after a single PCP dose did not occur. In contrast to the reversal of the effects of acute PCP on the cholinergic enzymes, that was seen after chronic PCP treatment, the changes in GAD activity induced by the single dose of PCP were maintained or increased in the tissue from chronically treated animals. Results indicate that tolerance or adaptation to the biochemical effects of PCP may characterize the effects of the drugh on some but not all neurotransmitter systems in rat brain. 19 references.

000135 Hu, Hsiang-Yun Yang; Davis, John M.; Heinze, William J.; Pandey, Ghanshyam N. Illinois State Psychiatric Institute, Chicago, IL 60612 **Effect of chronic treatment with antidepressants on beta-adrenergic receptor binding in guinea pig brain.** Biochemical Pharmacology. 29(20):2895-2896, 1980.

The effects of chronic treatment with antidepressants on beta-adrenergic receptor binding in guinea-pig brain were investigated. Contrary to reports on the rat brain, results indicate no significant change in beta-adrenergic receptor density or apparent affinity for (3H)dihydroalprenolol in the guinea-pig cerebral cortex after chronic treatment with desipramine, phenelzine, or electroconvulsive shock. These observations suggest that there are species differences between guinea-pig and rat cerebral cortex in the response of beta-adrenergic receptors to chronic antidepressant treatment. 14 references.

000136 Huff, Joseph W.; Reigle, Thomas G. University of Georgia School of Pharmacy, Dept. of Pharmacology, Athens, GA 30602 **Effects of morphine and other centrally acting drugs on 3,4-dihydroxyphenylethylene glycol sulfate (DOPEG-SO4) in rat brain.** Life Sciences. 27(16):1483-1488, 1980.

Brain concentrations of 3,4-dihydroxyphenylethylene glycol sulfate (DOPEG SO4) were measured fluorometrically 0, 0.5, 1, 2, 4, and 8 hr after ip injections of morphine sulfate, d-amphet amine sulfate, desmethylimipramine HCl, or reserpine, to observe the effects of these drugs on intraneuronal norepinephrine degradation. No change in brain levels of DOPEG SO4 was found until 8 hr after morhpine, at which time the metabolite was significantly decreased. d-Amphetamine and desmethylimipramine significantly decreased the metabolite at all observed timepoints after 0 hr. Brain DOPEG S04 after reserpine was significantly increased at 0.5 and 1 hr, and significantly decreased at 4 and 8 hr. DOPEG SO4 remained unchanged 0 to 8 hr after saline injections. These results, together with previous measurements of brain 3-methoxy-4-hydroxyphenylethylene glycol sulfate indicate that the mechanism of morphine action on noradrenergic neurons differs from those of the other drugs examined, and that morphine may cause central norepinephrine release. 25 references. (Author abstract modified)

000137 Huidobro-Toro, J. Pablo; Way, E. Leong. Way: Dept. of Pharmacology S-1210, University of California, San Francisco, CA 94143 **Studies on the hyperthermic response of beta-endorphin in mice.** Journal of Pharmacology and Experimental Therapeutics. 211(1):50-58, 1979.

Intraventricular administration of beta-endorphin in ICR mice resulted in a dose dependent, naloxone reversible hyperthermia of fast onset and long duration. Enkephalins also induced hyperthermia, but were much less potent than beta-endorphin. The increase in body temperature observed after beta-endorphin was not mediated by prostaglandins. Results suggest that beta-endorphin may act directly at brain thermoregulatory sites. (Author abstract modified)

000138 Hwang, Eunyong Chung; Magnussen, Ib; Van Woert, Melvin H. Dept. of Neurology, Mount Sinai School of Medicine, Fifth Ave. and 100th St., New York, NY 10029 **Effects of chronic fluoxetine administration on serotonin metabolism.** Research Communications in Chemical Pathology and Pharmacology. 29(1):79-98, 1980.

Brain serotonin (5-HT) concentration, tryptophan hydroxylase activity, 3H-5-hydroxytryptophan synaptosomal uptake, and 3H-5-HT receptor binding in male Swiss-Webster mice were not altered by a single injection of fluoxetine (10mg/kg i.p.) or by 14 daily injections of the drug. Acute fluoxetine treatment decreased 3H-5-HT synaptosomal uptake by 87% and reduced brain 5-hydroxyindoleacetic acid by 46%, compared to reductions of 93% and 52%, respectively, after chronic fluoxetine administration. Chronic fluoxetine treatment decreased brain 5-HT synthesis, at least partly as a result of noncompetitive inhibition of 3H-tryptophan synaptosomal uptake. A single fluoxetine injection potentiated the produced by tranylcypromine, tranylcypromine combined with L-tryptophan, or L-5-hydroxytryptophan. Chronic fluoxetine potentiated the serotonin syndrome induced by L-5-hydroxytryptophan, but had attenuated effects on the serotonin syndrome induced by tranylcypromine alone or combined with tryptophan. 44 references. (Author abstract modified)

000139 Hyttel, John. Dept. of Pharmacology and Toxicology, H. Lundbeck and Co. A/S, Ottiliavej 7-9, DK-2500 Copenhagen-Valby, Denmark **Characterization of 3H-GABA receptor binding to rat brain synaptosomal membranes: effect of non GABAergic compounds.** Psychopharmacology. 65(2):211-214, 1979.

Characteristics of 3H GABA binding to rat brain synaptic membranes in vitro were investigated. The specific binding of 3H GABA displays saturation kinetics. Only one single population of receptor sites was found with a concentration of 2.09pM/mg protein. Only GABA agonists show inhibitory effect on the binding, whereas GABA antagonists, GABA uptake inhibitors, and inhibitors of L-glutamic acid decarboxylase (GAD), and GABA-T are without effect. The order of potencies for GABA agonists beginning with the stongest is: muscimol, GABA, 4,5-dihydromuscimol (which is less than or equal to GABA), 3-aminopropane sulphonic acid, isoguvacine, THIP, 3-hydroxy-GABA, and imidazol-4-acetic acid. Agonists and antagonists from other neuron systems as well as neuroleptics and benzodiazepines had no or only a very slight potency in the binding test. 23 references. (Author abstract modified)

000140 Iadarola, Michael J.; Raines, Arthur; Gale, Karen. Dept. of Pharmacology, Georgetown University Medical and Dental Schools, Washington, DC 20007 **Differential effects of n-dipropylacetate and amino-oxyacetic acid on gamma-aminobutyric acid levels in discrete areas of rat brain.** Journal of Neurochemistry. 33(5):1119-1123, 1979.

The effects of n-dipropylacetate (DPA) and aminooxyacetic acid (AOAA) on GABA levels in six brain regions were studied in male Sprague-Dawley rats. GABA levels varied across brain areas after DPA or AOAA. DPA (400mg/kg) was less effective than AOAA (20mg/kg) in raising whole brain GABA levels, but DPA was more effective than AOAA in raising GABA levels in the superior colliculus and cerebellum. The substantia nigra and caudate nucleus were relatively unresponsive to AOAA and DPA. 28 references.

000141 Ilett, Kenneth F.; George, Charles F.; Davies, Donald S. Davies: Clinical Pharmacology, University of Southampton, Southampton, SO9 3TU, England **The effect of monoamine oxi-**

dase inhibitors on Biochemical Pharmacology. 29(19):2551-2556, 1980.

The role of the intestine in metabolic inactivation of tyramine (TYR) was studied in an isolated intestinal loop preparation in anesthetized dogs, and the effects of monoamine oxidase (MAO) inhibitors, tranylcypromine or MD780515 on this process were investigated. In control animals there was extensive metabolism of tyramine on passage through the intestinal wall and p-hydroxyphenylacetic acid (p-OHPA) was the only metabolite found in venous plasma from the loop. Pretreatment with MAO inhibitors significantly lowered the ratio of p-OHPA/TYR measured 3 h after the last dose. Tranylcypromine produced a nonselective irreversible inhibition of both MAO type-A and MAO type-B whereas MD780515 was found to be a selective inhibitor of MAO type-A and also appeared to be reversible. 15 references. (Author abstract modified)

000142 Ito, T.; Hori, M.; Masuda, Y.; Yoshida, K.; Shimizu, M. Dept. of Pharmacology, Dainippon Pharmaceutical Co., Ltd., Research Laboratories, 33-94, Enoki-cho, Suita-shi, Osaka 564, Japan **3-Sulfamoylmethyl-1,2-benzisoxazole, a new type of anticonvulsant drug: electroencephalographic profile.** Arzneimittel-Forschung. 30(4):603-609, 1980.

Effects of 3-sulfamoylmethyl-1,2-benzisoxazole (AD-810) on induced seizure activities in rats and cats were examined using EEGs. AD-810 depressed the cortical focal seizure induced by electrical stimulation of the visual cortex at doses ineffective against the thalamic and hippocampal after discharges in cats. AD-810 suppressed both interictal spikes and secondary generalized seizures induced by tungstic acid gel. Suppression of the spikes and SGS by AD-810 was also observed in cats with the epileptogenic foci produced by cortical freezing. It is suggested that AD-810 suppresses the epileptogenic focus activity in the cortex and blocks the seizure propagation from the cortex to the subcortical structures through the effects on the cortex. 26 references. (Author abstract modified)

000143 Jacquet, Yasuko F. Center for Neurochemistry, Rockland Research Institute, Ward's Island, NY 10035 **Excitatory and inhibitory effects of opiates in the rat vas deferens: a dual mechanism of opiate action.** Science. 210(4465):95-97, 1980.

The effects of morphine on the rat vas deferens were studied. It was found that morphine exerts a dual action, both excitatory and inhibitory, on this prepartion, with the excitatory effect masking the inhibitory one. To demonstrate the inhibitory action, cross-tolerance to the inhibitory action of beta-endorphin after exposure to morphine was studied. This effect was observed to be stereospecific while the excitatory action was nonstereospecific and was not blocked by the opiate antagonist (-)-nalaxone. These findings extend to a peripheral organ previous findings that morphine exerts dual actions that are mediated by stereospecific inhibitory receptors and nonstereospecific excitatory receptors, with the former being blocked stereospecifically by (-)-nalaxone. 15 references. (Author abstract modified)

000144 Jelinek, R.; Peterka, M.; Benesova, O. Institute of Experimental Medicine, Czechoslovak Academy of Sciences, Prague, Czechoslovakia **Effects of some nootropic drugs upon the embryonic morphogenetic systems.** In: Benesova, O., 21. Annual Czechoslovak Psychopharmacological Meeting. Jesenik Spa, Czechoslovakia, 1979. 140 p. (p. 73-78).

Effects of meclophenoxate (centrophenoxine), piracetam, and pyrithioxine upon the function of morphogenetic systems were investigated using the chick embryotoxicity screening test. As expected, none of the substances were found to have general embryotoxic and cytotoxic properties; but in higher dosages and at more advanced developmental stages, they were able to alter the function of several differentiated morphogenetic systems. While pyrithioxine, and above all piracetam, exhibited satisfactory distances between the therapeutically and embryotoxically effective dose ranges, the clear cut affinity of centrophenoxine to the cardiovascular system requires further investigation. 10 references. (Author abstract)

000145 Jobe, Phillip C.; Graham, L. T., Jr.; Ray, Tom B.; Mims, Malcolm E. Veterans Administration Medical Center, Shreveport, LA 71130 **Effects of gamma-acetylenic GABA and gamma-vinyl GABA on electrically-induced spinal cord convulsions and on spinal cord GABA concentration.** Life Sciences. 27(21):2005-2011, 1980.

The effects of gamma-acetylenic GABA and gamma-vinyl GABA on electrically-induced spinal cord convulsions were compared to the effects of these same drugs on spinal cord GABA concentration. The data show that the effects of these two compounds on seizure activity do not correlate either positively or negatively with changes in GABA concentration. Although both drugs produced marked increases in the amount of GABA in the spinal cord, their effects on spinal cord convulsions were qualitatively different and failed to correlate temporally with alterations in GABA concentration. 15 references. (Author abstract)

000146 Jobe, Phillip C.; Ray, Tom B. Dept. of Pharmacology and Therapeutics, Louisiana State University School of Medicine, P. O. Box 33932, Shreveport, LA 71130 **The effects of reserpine, iproniazid and L-dopa on electrically-induced spinal cord seizures.** Research Communications in Chemical Pathology and Pharmacology. 29(3):417-427, 1980.

The effects of selected drug treatments on electrically-induced spinal cord seizures and on spinal cord levels of norepinephrine (NE), dopamine (DA), and 5-hydroxytryptamine were studied in female Sprague-Dawley rats. Reserpine depleted monoamine stores and facilitated spinal cord seizures. L-DOPA elevated DA levels and had no effect on spinal cord seizures when given alone, but showed anticonvulsant effects and elevated DA and NE when given to rats pretreated with iproniazid. Iproniazid had no effect on monoamines but facilitated seizure activity. Results suggest that spinal cord noradrenergic neurons act to attenuate convulsive activity. 10 references. (Author abstract modified)

000147 Johansson, Barbro B.; Martinsson, Lena. Dept. of Neurology, Sahlgren Hospital, S-413 45 Goteborg, Sweden **The blood-brain barrier in adrenaline-induced hypertension.** Acta Neurologica Scandinavica. 62(2):96-102, 1980.

Circadian variations and modification by beta-adrenoreceptor antagonists of the blood-brain barrier (BBB) in adrenaline-induced hypertension were investigated in rats. Albumin leakage into the brain of rats subjected to adrenaline-induced acute hypertension during either the day or night was studied with Evans blue and 125I labeled serum albumin. Leakage was significantly lower during the night than during the day. d,l-propranolol had a protective effect during the day and a slight reduction of radioactivity was obtained by metoprolol, but not by butoxamine. None of the drugs reduced the tracer leakage during the night. Results suggest that the degree of altertness is of importance for the function of the BBB in acute hypertension. However, the present methods do not allow assessment of the effects of alertness unconfounded by the effect of the dark/light cycle. 20 references. (Author abstract modified)

000148 Johnson, Kenneth M.; Fritz, Richard R.; Vickroy, Thomas W. Dept. of Pharmacology and Toxicology, University of Texas Medical Branch, Galveston, TX 77550 **The conversion of (3H)tryptophan to 5-(3H)hydroxytryptamine in mouse brain**

following depletion of phenylalanine and tyrosine. Journal of Neurochemistry. 33(5):1075-1081, 1979.

Phenylalanine ammonia-lyase (PAL) significantly depleted plasma tyrosine in male ICR mice, but had little effect on brain tyrosine or catecholamine concentrations. Endogenous brain tryptophan levels were significantly increased 2 hours after PAL administration, and brain serotonin (5-HT) was dramatically increased 4 hours after PAL injection. The return to baseline levels (by 8 hours) was accompanied by a marked decrease in the fraction of tryptophan converted to 5-HT, suggesting the activation of a compensatory decrease in 5-HT synthesis in response to increased 5-HT concentration. 27 references. (Author abstract modified)

000149 Jonakait, G. Miller, Bohn, Martha C.; Black, Ira B. Division of Developmental Neurology, Cornell University Medical College, New York, NY 10021 **Maternal glucocorticoid hormones influence neurotransmitter phenotypic expression in embryos.** Science. 210(4469):551-553, 1980.

The effects of neurologically active drugs on the embryonic nervous system of rats were studied. Treatment of pregnant rats with reserpine prevented the normal disappearance of catecholamine fluorescence in presumptive neuroblasts of the embryonic gut. These cells express the noradrenergic phenotype transiently during embryonic development. The effect of reserpine was reproduced by treating mothers with hydrocortisone acetate. The reserpine effect was blocked by treatment with dexamethasone, which inhibits the stress-induced increase in plasma glucocorticoids, and by mitotone, which causes adrenocortical cytolysis. It is concluded that reserpine, through the mediation of maternal glucocorticoid hormones, alters the phenotypic expression of these embryonic neuroblasts. 22 references. (Author abstract modified)

000150 Jope, Richard S.; Jenden, Donald J. Dept. of Pharmacology, School of Medicine, University of California, Los Angeles, CA 90024 **Dimethylaminoethanol (deanol) metabolism in rat brain and its effect on acetylcholine synthesis.** Journal of Pharmacology and Experimental Therapeutics. 211(3):472-479, 1979.

The metabolism of dimethylaminoethanol (deanol) and its effects on acetylcholine (ACh) were studied in male Sprague-Dawley rats. Deanol was not methylated or acetylated in rat brain in vivo or in vitro. In vitro, deanol weakly inhibited high affinity transport of choline, thus reducing ACh synthesis. ACh synthesis was not affected by deanol in vivo, but choline levels in plasma and brain were increased. 53 references. (Author abstract modified)

000151 Kageyama, Hiroyasu; Kurosawa, Atsushi. Shionogi Research Laboratories, Shionogi and Co., Ltd., Sagisu, Fukushima-ku, Osaka 553, Japan **A probable site of action of diazepam in rat cerebellar GABA system.** Life Sciences. 27(19):1783-1789, 1980.

Diazepam and some neurotropic drugs were examined for their effects on the cyclic guanosine 3',5'-monophosphate (cyclic GMP) content in rat cerebellum. Diazepam caused a marked decrease of cerebellar cyclic GMP content in a dose dependent manner. Elevation of cerebellar GABA level by aminooxyacetic acid also caused a decrease in the cyclic GMP content. However, dl-amphetamine, oxotremorine, picrotoxin, and GABA reducing agents such as isoniazid or thiosemicarbazide increased the content of this nucleotide. The increase of cyclic GMP content elicited by isoniazid was blocked completely by the premedication of diazepam in doses causing partial reduction of dl-amphetamine or oxotremorine action. Changes of cerebellar GABA level, which were caused by aminooxyacetic acid or thiosemicarbazide, did not influence the effect of diazepam. Moreover, the inhibitory action of diazepam on the picrotoxin-induced increase of cyclic GMP was a competitive type. These results suggest that diazepam facilitates the GABAergic function by acting on a picrotoxin sensitive site of the GABA receptor complex in vivo. 25 references. (Author abstract modified)

000152 Karasawa, T.; Furukawa, K.; Ochi, Y.; Ito, T.; Yoshida, K.; Shimizu, M. Dept. of Pharmacology, Research Laboratories, Dainippon Pharmaceutical Co., Ltd., Enoki-cho, Suita, Osaka 564, Japan **Antidepressant properties of 2-(4-ethyl-1-piperazinyl)-4-phenylquinoline hydrochloride (AD-1308) and its mechanism of action as compared with tricyclic antidepressants.** Archives Internationales de Pharmacodynamie et de Therapie. 245(2):283-302, 1980.

Antidepressant properties of a new quinoline derivative, 2-(4-ethyl-1-piperazine)-4-phenylquinoline (AD-1308) and its possible mechanism of action were studied in animals, in comparison with those of standard tricyclic antidepressants. In a variety of behavioral antidepressant models or tests, including classical as well as recently developed ones, AD-1308 showed quite a similar profile to that of tricyclic antidepressants, with a potency stronger than that of imipramine. Biochemically, AD-1308 caused a marked reduction of main norepinephrine metabolites, 3-methoxy-4-hydroxyphenylethylene glycol sulphate and 3,4-dihydroxyphenylethylene glycol sulphate in the rat brain. In addition the compound caused a pronounced increase in brain homovanillic acid and 3,4-dihydroxyphenylacetic acid, the major metabolites of brain dopamine, which was almost comparable to the increase seen after neuroleptics. When the effects on unit activity of brain monoamine cells were examined in rats by microelectrode techniques, AD-1308 was found to decrease, like imipramine, the firing rate of norepinephrine cells in the locus coeruleus, but did not cause any distinct effect on the firing rate of dopamine cells of the substantia nigra, despite the pronounced effect on brain dopamine metabolism observed biochemically. Results suggest a possibility of AD-1308 as a potential antidepressant of tricyclic type and imply that its antidepressant effects are mediated through the action of this compound on the brain noradrenergic neuronal system. 23 references. (Author abstract)

000153 Karoum, F.; Speciale, S. G., Jr.; Wyatt, R. J. Lab. of Clinical Psychopharmacology, Division of Special Mental Health Research, NIMH, Saint Elizabeths Hospital, Washington, DC 20032 **Biochemical characterization of the rat sympathetic ganglion: pharmacological effects of reserpine on ganglionic catecholamines.** Journal of Pharmacology and Experimental Therapeutics. 211(3):706-710, 1979.

The effects of reserpine on catecholamines and their metabolites in the Sprague-Dawley rat superior cervical and celiac ganglia were studied. Results indicate that the acute effects of reserpine on sympathetic ganglia are local, but may be modulated by preganglionic nerve input. Reserpine increased the concentration of 3,4-dihydroxyphenylacetic acid (DOPAC), due to increased dopamine turnover independent of reserpine's amine depleting effects. The increase in DOPAC also showed that reserpine exaggerates the responses of the small intensely fluorescent cells. 33 references. (Author abstract modified)

000154 Kaul, C. L.; Grewal, R. S. Boots Co. Ltd., Sion, Bombay 22, India **Increased urinary excretion of catecholamines and their metabolites in streptozotocin diabetic rat.** Pharmacology. 21(3):223-228, 1980.

Female rats made diabetic by i.v. administration of streptozotocin showed no significant changes in endogenous noradrenaline content in heart or brain. However, all diabetic animals showed increased excretion of adrenaline, noradrenaline, and 3-

methoxy-4-hydroxy mandelic acid. The rate of disappearance of 3H-noradrenaline from heart was significantly elevated in the diabetic rats. It is concluded that the increased disappearance of 3H-noradrenaline and increased urinary catecholamine excretion reflect increased sympathetic activity in these diabetic animals. 16 references. (Author abstract modified)

000155 Kaur, Charanjit; Mangat, H. K. Mangat: Dept. of Physiology, University of Texas, Health Science Center, Dallas, TX 75235 **Inferences derived from electroencephalographic responses to acute administration of clomiphene citrate in male albino rats.** Physiology and Behavior. 25(4):489-494, 1980.

Electroencephalographic (EEG) responses were recorded from preoptic, posterior hypothalamus, and fronto/parietal cortical areas in mature male rats before and after injection of clomiphene citrate (CC). The immediate response to CC injection was the occurrence of slow waves in preoptic, which later appeared in posterior hypothalamus. Slowing from posterior hypothalamus was very conspicuous, consisting of occasional high voltage rolling waves intermingled with low voltage fast components ending in discharge of long duration. Intermittent burst of slow waves were observed as a regular feature from preoptic. By the end of two and a half hours, EEG activity of posterior hypothalamus was similar to that of preoptic. These EEG changes are discussed with reference to hypothalamic control mechanisms for the secretion of gonadotropins and libido display in the presence of CC. 26 references. (Author abstract modified)

000156 Keane, P. E.; Kan, J. P.; Sontag, N.; Strolin Benedetti, M. Strolin Benedetti: Centre de Recherche Delalande, 10, rue des Carrieres, F-92500 Rueil-Malmaison, France **Monoamine oxidase inhibition and brain amine metabolism after oral treatment with toloxatone in the rat.** Journal of Pharmacy and Pharmacology. 31(11):752-754, 1979.

Monoamine oxidase (MAO) activity was determined in the brains of male rats killed 0.5 to 8 hours after oral administration of 100mg/kg toloxatone, a potential antidepressant. The drug reversibly inhibited type-A MAO, but did not alter type-B MAO in whole brain. Cerebral concentrations of noradrenaline, dopamine, and 5-hydroxytryptamine were increased after toloxatone, and concentrations of their metabolites were reduced. Synaptosomal uptake of these amines were not altered. 22 references. (Author abstract modified)

000157 Kerwin, Robert; Pycock, Christopher. Dept. of Pharmacology, Medical School, Bristol BS8 1TD, England **GABA inhibition of 3H-glycine release from slices of rat substantia nigra in vitro.** European Journal of Pharmacology. 64(2/3):169-172, 1980.

The effect of gamma-aminobutyric acid (GABA), muscimol, and two other inhibitory amino acids, beta-alanine and taurine, on the spontaneous and potassium evoked release of preloaded 3H-glycine from slices of rat substantia nigra (SN) in vitro was studied. The potassium evoked release of 3H-glycine was abolished by GABA and muscimol. Taurine and beta-alanine were without effect on evoked 3H-glycine release. The effect of GABA was reversed by picrotoxin. Results support the hypothesis that GABA receptors may be present on glycinergic interneurones in the SN. 10 references. (Author abstract modified)

000158 Kilpatrick, I. C.; Starr, M. S.; Fletcher, A.; James, T. A.; MacLeod, N. K. Starr: Dept. of Pharmacology, School of Pharmacy, University of London, 29-39 Brunswick Square, London WC1N 1AX, England **Evidence for a GABAergic nigrothalamic pathway in the rat: I. Behavioural and biochemical studies.** Experimental Brain Research. 40(1):45-54, 1980.

Behavioral and biochemical studies of a GABAergic nigrothalamic pathway in the rat are described. Unilateral stereotaxic microinjection of muscimol into the caudal region of the substantia nigra (SN) evoked tight, dose related, contralateral locomotor asymmetry and stereotypy. These behaviors were partially attentuated by various pretreatments, including 6-hydroxydopamine lesions of the nigrostriatal dopamine pathway, i.p. haloperidol, and inhibition of thalamic GABA transaminase activity by local intrathalamic injection of ethanolamine-O-sulphate. Results suggest that the nigrostriatal dopamine pathway, the nigrothalamic projection, and possibly other nondopaminergic SN efferents all play important roles in mediating the influences of the SN on motor and stereotyped behaviors. These data are consistent with the nigrothalamic system having a GABAergic inhibitory function. 44 references. (Author abstract modified)

000159 Kinemuchi, Hiroyasu; Wakui, Yoshiko; Arai, Yuichiro; Kamijo, Kazuya. Dept. of Pharmacology, School of Medicine, Showa University, Hatanodai, shinagawa-ku, Tokyo 142, Japan **Inhibition of monoamine oxidase by clorgyline and deprenyl in circumventricular structures of rat brain.** Biochemical Pharmacology. 29(20):2871-2874, 1980.

Biochemical studies using three different types of substrate concerning the possible existence of type-C monoamine oxidase (MAO-C), and concerning inhibition of MAO in circumventricular structures of rat brain by selective inhibitors, are described. The inhibitory effects of clorgyline and deprenyl on MAO in homogenates of circumventricular structures of rat brain were studied. Results confirm that irreversible inhibition of MAO-A by deprenyl requires a longer incubation time and a higher temperature than that by clorgyline. These findings also confirm the reports of others that the extent and irreversibility of MAO inhibition by these inhibitors depend on the ratio of the concentrations of inhibitor and enzyme protein and that irreversible inactivation is more rapid when the ratio is high. It is concluded that the circumventricular structures of rat brain, like preparations of whole rat brain, contain only MAO-A and MAO-B activities. 28 references.

000160 King, Gary A.; Burnham, W. McIntyre; Livingston, Kenneth E. Bio-Research Laboratories, Ltd., 87 Senneville Road, Senneville, Quebec, Canada H9X 3R3 **Flash-evoked afterdischarge in rat as a model of the absence seizure: dose-response studies with therapeutic drugs.** Epilepsia. 21(5):531-539, 1980.

Dose-response relationships for the suppression of flash evoked afterdischarge (FEAD) by six antiepileptic drugs with established clinical profiles were examined in the rat to test the validity of FEAD as an absence seizure model. Phenobarbital, ethosuximide, and trimethadione suppressed FEAD in a dose related manner; ethosuximide was approximately three times as potent as trimethadione. Mephenytoin produced a maximal reduction of FEAD of only 30% to 40%, which was not dose related. Neither phenytoin nor acetazolamide suppressed FEAD. Results obtained with ethosuximide, trimethadione, and phenytoin are qualitatively similar to their therapeutic effects in absence epilepsy. The FEAD model failed to unequivocally predict therapeutic efficacy of mephenytoin or acetazolamide. In this respect, it is similar to the metrazol seizure model. It is concluded that FEAD is a valid absence seizure model with a pharmacological predictive value at least as good as the metrazol model. 36 references. (Author abstract modified)

000161 Kirby, Margaret L. Dept. of Anatomy, Medical College of Georgia, Augusta, GA 30912 **Reduction of fetal rat spinal cord volume following maternal morphine injection.** Brain Research. 202(1):143-150, 1980.

The reduction of fetal rat spinal cord volume following maternal morphine injection was investigated. Pregnant Wistar rats were injected on days 12 to 18 of gestation with 5mg/kg of morphine four times daily. Noninjected, saline injected, and pair fed controls were prepared for comparison. On day 18 of gestation, the fetuses were perfused and the volume of the first thoracic spinal cord segment was measured using planimetric measurements of histological sections. Volumes of hemisection, gray matter, white matter, dorsal horn, and ventral horn, were reduced by 20% in morphine exposed fetuses and 10% in pair fed fetuses. The length of the spinal cord segment was not different from controls. In addition, bodyweights were not reduced in either the morphine exposed or pair fed fetuses. 20 references. (Author abstract modified)

000162 Kitzen, Jan M.; Strait, M. Randall; Long, John P.; De Groat, William C. Long: Dept. of Pharmacology, College of Medicine, University of Iowa, Iowa City, IA 52242 **The effects of two analogs of dopamine on ganglionic transmission in the sympathetic nervous system.** Journal of Pharmacology and Experimental Therapeutics. 211(3):519-524, 1979.

The effects of two aminotetralin analogs of dopamine on ganglionic transmission in the cat sympathetic nervous system were examined. Spontaneous firing in the renal nerve, external carotid branch, and lumbar chain was markedly inhibited by 6,7-dihydroxy-2-dimethylaminotetralin and 5,6-dihydroxy-2-dimethylaminotetralin. Splanchic nerve activity was not altered. Results suggest that these compounds depress transmission at certain ganglionic pathways. 21 references. (Author abstract modified)

000163 Kleinrok, Zdzislaw; Czuczwar, Stanislaw J.; Kozicka, Maria. Dept. of Pharmacology, Institute of Clinical Pathology, Medical School, 8 Jaczewskiego, 20-090 Lublin, Poland **Effect of dopaminergic and GABA-ergic drugs given alone or in combination on the anticonvulsant action of phenobarbital and diphenylhydantoin in the electroshock test in mice.** Epilepsia. 21(5):519-529, 1980.

The effect of dopaminergic and GABA-ergic drugs, alone or in combination on the anticonvulsant actions of phenobarbital (PB, 20mg/kg) or diphenylhydantoin (DPH, 8mg/kg) was examined in mice using the electroshock test with hind limb tonic extension as the end point. Apomorphine (10mg/kg) exerted no effect; amantadine (25 and 100mg/kg) decreased the anticonvulsant action of DPH; and L-DOPA (500mg/kg) and d,l-amphetamine (10mg/kg) potentiated the action of both drugs. Fluphenazine (4mg/kg) had no influence on the effects of the two anticonvulsants, but haloperidol lessened that of DPH. All GABA-ergic stimulants used, i.e. gama-hydroxybutyric acid (GHBA, 250mg/kg), baclofen (2.5 and 10mg/kg), and aminooxoacetic acid (AOAA, 15 and 20mg/kg) potentiated the action of PB; the action of DPH was unaffected by these drugs, except for AOAA (20mg/kg). The combined treatment with dopaminergic and GABA-ergic stimulants, being ineffective in terms of anticonvulsant activity, resulted in a marked potentiation of the action of PB and DPH. The most distinct potentiation was noted in the case of PB, baclofen (1mg/kg), and amantadine (25mg/kg). 41 references. (Author abstract modified)

000164 Klotz, Ulrich; Reimann, Ingrid. Dr. Margarete Fischer-Bosch Institut fur Klinische Pharmakologie, Auerbachstr. 112, 7000 Stuttgart 50, Germany **Delayed clearance of diazepam due to cimetidine.** New England Journal of Medicine. 302(18)1012-1014, 1980.

The effect of cimetidine on plasma levels of diazepam and antipyrine were investigated with six healthy volunteers. It is noted that five of six subjects experienced a much stronger sedation and even fell asleep when diazepam was injected after cimetidine. The findings demonstrate clearly that the interaction between cimetidine and diazepam is of clinical relevance and great practical importance. The increase in the potency of the sedatives is explained by observed alterations in the distribution and elimination of diazepam. In addition to impairing the clearance of diazepam, cimetidine decreased the volume of the central compartment. It appears prudent to monitor patients closely if benzodiazepines and cimetidine are given at the same time. 10 references.

000165 Knepel, W.; Nutto, D.; Anhut, H.; Hertting, G. Dept. of Pharmacology, University of Freiburg, Hermann-Herder-Str. 5, D-7800 Freiburg, Germany **Naloxone promotes stimulus-evoked vasopressin release in vivo.** European Journal of Pharmacology. 65(4):449-450, 1980.

In conscious male Wistar rats, intramuscular injections of naloxone (1.0mg/kg) had no effect on basal levels of vasopressin in plasma. However, pretreatment with naloxone enhanced the increase in plasma vasopressin induced by isoprenaline (45mcg/kg). Results suggest that endogenous opioid peptides may exert an inhibitory influence on vasopressin secretion. 5 references.

000166 Kocsis, Jeffery D.; Waxman, Stephen G. Dept. of Neurology, V.A. Medical Center, Palo Alto, CA 94304 **Absence of potassium conductance in central myelinated axons.** Nature. 287(5780):348-349, 1980.

The effects of superfusion of myelinated axons in the rat dorsal columns (DCs) with the voltage dependent potassium conductance blocking agents tetraethylammonium hydrochloride (TEA) and 4-aminopyridine (4-AP) were studied. Also, intraaxon recordings with microelectrodes filled with TEA were obtained, thereby providing monitoring of internodal as well nodal axon membrane in the intact myelinated central axon. Although TEA injection into spinal motoneurons elicited a rapid and powerful prolongation of the motoneuron (somadendritic) action potential, the axonal action potential recorded from DC axons remained virtually unchanged even after prolonged TEA injection. In addition, superfusion of the spinal cord with 4-AP or TEA neither changed the action potential waveform nor altered the fiber refractor period. 14 references. (Author abstract modified)

000167 Konishi, Shiro; Tsunoo, Akinobu; Otsuka, Masanori. Dept. of Pharmacology, Faculty of Medicine, Tokyo Medical and Dental University, Yushima, Bunkyo-ku, Tokyo, Japan **Enkephalins presynaptically inhibit cholinergic transmission in sympathetic ganglia.** Nature. 282(5738):515-516, 1979.

The effects of enkephalins on cholinergic transmission in sympathetic ganglia of male guinea-pigs were studied. Met-enkephalin, leu-enkephalin, and (D-Ala2)-methionine-enkephalinamide (DAEA) all depressed the excitatory postsynaptic potentials (EPSPs) evoked by preganglionic stimulation in the coeliac/superior mesenteric and inferior mesenteric ganglia. The acetylcholine-induced depolarization of postganglionic cells was not altered by DAEA when the simultaneously recorded EPSP was markedly reduced in size. Results suggest that enkehpalins are involved in presynaptic inhibition of cholinergic transmission in mesenteric ganglia. 19 references. (Author abstract modified)

000168 Kosterlitz, H. W.; Lord, J. A. H.; Paterson, S. J.; Waterfield, Angela A. Unit for Research on Addictive Drugs, University of Aberdeen, Aberdeen, Scotland **Effects of changes in the structure of enkephalins and of narcotic analgesic drugs on their interactions with mu- and delta-receptors.** British Journal of Pharmacology. 68(2):333-342, 1980.

The activity pattern of analogues of the enkephalins was determined in four parallel assays, the inhibition of the electrically evoked contraction of the guinea-pig ileum and mouse vas deferens at 36 degrees C and the inhibition of (3H)naltrexone and (3H)leucine enkephalin binding at zero to 4 degrees C in homogenates of guinea-pig brain. The activity pattern was best characterized by the ratio of the potency in the guinea-pig ileum to that in the mouse vas deferens and the ratio of the potency in inhibiting (3H)naltrexone binding to that in inhibiting (3H)leucine enkephalin binding (Nal/Leu). It would appear that compounds with low ratios of the potency in the guinea-pig ileum to mouse vas deferens and Nal/Leu ratios interact mainly with delta-receptors in the brain and peripheral nervous system while compounds with high ratios interact mainly with mu-receptors. For antinociceptive action mu receptors may be more important than delta-receptors. 21 references. (Author abstract modified)

000169 Koyuncuoglu, Hikmet; Keyer-Uysal, Meral; Berkman, Kemal; Gungor, Mehmet; Genc, Ece M. Dept. of Pharmacology and Clinical Pharmacology, Istanbul Medical Faculty, Capa-Istanbul, Turkey **The relationship between morphine, aspartic acid and L-asparaginase in rats.** European Journal of Pharmacology. 60(4):369-372, 1979.

The effects of morphine and aspartic acid on L-asparaginase activity in the brain, liver, and kidney of male albino rats were examined. Morphine decreased brain L-asparaginase activity in brain and liver and increased it in kidney. Aspartic acid completely antagonized the effects of morphine. When given alone, aspartic acid decreased liver L-asparaginase activity and increased enzyme activity in kidney. Intravenous administration of 500IU/kg L-asparaginase antagonized the hypoactivity and analgesia induced by morphine (5 or 10mg/kg i.v.). 6 references. (Author abstract modified)

000170 Lahti, Robert A.; Barsuhn, Craig. CNS Diseases Research, Upjohn Co., Kalamazoo, MI 49001 **The effect of antidepressants on L-5HTP-induced changes in rat plasma corticosteroids.** Research Communications in Chemical Pathology and Pharmacology 28(2):343-349, 1980.

A low dose (12.5mg/kg) of L-5-hydroxtryptophan (L-5HTP) elevated plasma corticosteroids in male Sprague-Dawley rats, and this effect was enhanced by fluoxetine and zimeldine. Chlorimipramine, viloxazine, and opipramol showed only weak potentiation of the L-5HTP effect and mianserin and dibenzepine strongly antagonized it. These results do not support the suggestion that antidepressants exert their therapeutic effects through serotonergic mechanisms. 6 references. (Author abstract modified)

000171 Lai, James C. K.; Leung, Thomas K. C.; Guest, Julian F.; Lim, Louis; Davison, Alan N. Miriam Marks Dept. of Neurochemistry, Institute of Neurology, National Hospital, Queen Square, London WC1N 3BG, England **The monoamine oxidase inhibitors clorgyline and L-deprenyl also affect the uptake of dopamine, noradrenaline and serotonin by rat brain synaptosomal preparations.** Biochemical Pharmacology. 29(20):2763-2767, 1980.

The effects of clorgyline and L-deprenyl, specific type-A and type-B monoamine oxidase (MAO) inhibitors, respectively as differential inhibitors of synaptosomal amine uptake was investigated, and the relationship between these effects and their specific MAO inhibitory effects was assessed. The rank order of inhibition of uptake by clorgyline was found to be: serotonin greater than dopamine greater than noradrenaline. The rank order of inhibition of uptake by L-deprenyl was: noradrenaline greater than serotonin greater than dopamine. The observation that clorgyline is a more specific inhibitor of the uptake of serotonin (a type-A MAO substrate) is consistent with its activity as a type-A MAO inhibitor. Paradoxically, L-deprenyl, though a type-B MAO inhibitor, is fairly effective at inhibiting the uptake of noradrenaline (a type-A MAO substrate). 19 references. (Author abstract modified)

000172 Lange, Stephan C.; Neafsey, E. J.; Wyler, Allen R. Dept. of Neurological Surgery, University of Washington, Seattle, WA 98195 **Neuronal activity in chronic ferric chloride epileptic foci in cats and monkey.** Epilepsia. 21(3):251-254, 1980.

The firing patterns of neurons surrounding sites of ferric chloride (FeCl3) injection were studied in six cats and one Macaca mulatta monkey. Although a few neurons fired in poorly structured bursts similar to what has been described for some neurons in alumina foci in monkeys, no well formed bursts were recorded. In addition, EEG spikes were not recorded chronically in two cats, nor were EEG spikes recorded during corticography. The reliability of this preparation could not be confirmed in cats as a model of chronic epilepsy. 10 references. (Author abstract)

000173 Lapin, Izyaslaw P. Laboratory of Psychopharmacology, Bekhterev Psychoneurological Research Institute, Leningrad, USSR **Dissimilar effects of nicotinamide and inosine, putative endogenous ligands of the benzodiazepine receptors, on pentylenetetrazol seizures in four strains of mice.** Pharmacology Biochemistry and Behavior. 13(3):337-341, 1980.

The effects of nicotinamide (NAM) and inosine (INS), two putative endogenous ligands of the benzodiazepine receptors, on pentylenetetrazol (PTZ) seizures in four strains of mice were investigated. In adult albino BALB/c mice INS prolonged the latency of PTZ seizures while NAM exerted an opposite effect. In adult male C57BL/6 mice, INS decreased lethality after PTZ while NAM increased it. In adult male albino SHR and in adult male CC57BR mice, INS and NAM did not modify the effect of PTZ. Results emphasize the importance of mouse strain for studies on INS and NAM as putative endogenous ligands of the benzodiazepine receptor. The opposite effects of INS and NAM raise doubts that these two substances could play the same or similar roles in the function of a type of benzodiazepine receptors which is related to the action of PTZ on the CNS. 18 references. (Author abstract modified)

000174 Larson, Alice A.; Anderson, Edmund G. Anderson: Dept. of Medical Pharmacology, University of Illinois Medical Center, 835 S. Wolcott, P.O. Box 6998, Chicago, IL 60680 **Changes in primary afferent depolarization after administration of gamma-acetylenic gamma-aminobutyric acid (GAG), a gamma-aminobutyric acid (GABA) transaminase inhibitor.** Journal of Pharmacology and Experimental Therapeutics. 211(2):326-330, 1979.

The GABA transaminase inhibitor gamma-acetylenic gamma-aminobutyric acid (GAG) increased the concentration of GABA in the cat spinal cord and doubled the height of the segmentally evoked dorsal root potential (DRP) in spinally transected cats. GAG decreased the DRP evoked in decerebrate cats by electrical stimulation of the brainstem. These GAG effects were accompanied by the development of spontaneous primary afferent depolarizations resembling DRPs in both spinal and decerebrate cats. Results suggest that GABA transaminase inhibition does not affect the axoaxonic GABA synapses mediating the DRP. 22 references. (Author abstract modified)

000175 Le Bars, Daniel; Guilbaud, Gisele; Chitour, Djamel; Besson, Jean Marie. Unite de Recherches de Neurophysiologie Pharmacologique de l'I.N.S.E.R.M. (U. 161), 2 rue d'Alesia, F-75014 Paris, France **Does systemic morphine increase descending**

inhibitory controls of dorsal horn neurones involved in nociception? Brain Research. 202(1):223-228, 1980.

The actions of systemic morphine on the activities of dorsal horn cells involved in the transmission of nociceptive messages in intact rats were studied. Results show that morphine induces a long lasting depression of dorsal horn neuronal response to C-fiber activation while responses to large myelinated fiber activation are only slightly and nonspecifically affected. In direct contrast, the effect of morphine upon C-fiber discharge was very significantly dose related, suggesting that specific opiate receptors are involved in the observed effect. It is concluded that a mechanism of depression is not added to the direct spinal effect of morphine, and that morphine does not enhance descending inhibitory controls of sugraspinal original. 19 references. (Author abstract modified)

000176 Le Fur, G.; Guilloux, F.; Mitrani, N.; Mizoule, J.; Uzan, A. Uzan: Pharmindustrie, Groupe Pharmuka, B.P. 158, F-92231 Gennevilliers Cedex, France **Relationships between plasma corticosteroids and benzodiazepines in stress.** Journal of Pharmacology and Experimental Therapeutics. 211(2):305-308, 1979.

Forced swimming induced an increase in plasma corticosteroid levels in male Sprague-Dawley rats. This increase was inhibited by benzodiazepines, phenobarbital, and meprobamate, but not by tricyclic antidepressants, monoamine oxidase inhibitors, neuroleptics, or amphetamine. Diazepam did not block the increase in plasma corticosteroid level induced by adrenocorticotrophic hormone and did not alter corticosteroid levels in hypophysectomized rats or in rats treated with betamethasone. Brief stress did not alter binding of (3H)diazepam in vitro or binding of (3H)flunitrazepam in vivo. 16 references. (Author abstract modified)

000177 Leal, K. W.; Rapport, R. L.; Wilensky, A. J.; Friel, P. N. Epilepsy Center ZA-50, Harborview Medical Center, 325 Ninth Ave., Seattle, WA 98104 **Single-dose pharmacokinetics and anticonvulsant efficacy of primidone in mice.** Annals of Neurology. 5(5):470-474, 1979.

The pharmacokinetics and efficacy of the anticonvulsant primidone (PRM) and its active metabolites, phenobarbital (PB) and phenylethylmalonamide (PEMA), were studied after single dose administration in mice. The half-life of PB was twice that of PRM and PEMA. The plasma/brain ratios provided evidence of poor penetration of PRM into the brain. The results support the findings of negligible or absent PRM concentrations in the brain of patients of primidone therapy who were undergoing surgery for intractable epilepsy. The anticonvulsant properties of PRM, PB, and PEMA against maximal electroshock in mice were also studied with the use of metabolic inhibitor SKF 525A. The half-life, potency, peak anticonvulsant effect, and effective dose curves of these compounds indicate that the anticonvulsant effect of short-term oral PRM administration in mice is from derived PB. 17 references. (Author abstract)

000178 Lee, H. K.; Dunwiddie, T. V.; Hoffer, B. J. Hoffer: Dept. of Pharmacology, C236, University of Colorado School of Medicine, 4200 E. Ninth Avenue, Denver, CO 80262 **Interaction of diazepam with synaptic transmission in the in vitro rat hippocampus.** Naunyn-Schmiedeberg's Archives of Pharmacology. 309(2):131-136, 1979.

Diazepam augmented recurrent inhibition of pyramidal neuron firing in a dose dependent manner in male Sprague-Dawley rat hippocampal slices. The drug-induced reversible and reliable increases in interneuron firing in response to stimulation of Schaffer collateral and commissural afferents. It is suggested that benzodiazepines augment central inhibiton by increasing the excitability of inhibitory interneurons or by increasing the strength of excitatory afferents to these cells. 34 references. (Author abstract modified)

000179 Leighty, Edith G. Pharmacology/Toxicology Section, Battelle, Columbus Laboratories, Columbus, OH 43201 **Beta-diethylaminoethyldiphenylpropylacetate (SKF 525-A) and 2,4-dichloro-6-phenylphenoxyethylamine-HBr (DPEA) inhibition of fatty acid conjugation to 11-hydroxy-delta9-tetrahydrocannabinol by the rat liver microsomal system.** Biochemical Pharmacology. 29(7):1071-1073, 1980.

The effects of SKF 525-A and DPEA on thein vitro rat microsomal fatty acid conjugating system were evaluated. Both SKF 525-A and DPEA were found to inhibit, at approximately the same percentage, the production of 11-palm-delta9-tetrahydrocannabinol from 11-OH-delta9-tetrahydrocannabinol (11-OH-delta9-THC). Results indicate that SKF 525-A and DPEA not only inhibit enzymes of the mixed function oxidase system involving cytochrome P-450, but also those involved in the conjugation of fatty acids to 11-OH-delta9-THC and possibly other hydroxylated compounds, such as cholesterol, which require coenzyme A and ATP in the system. 10 references.

000180 Lengvari, I.; Branch, B. J.; Taylor, A. N. Taylor: Dept. of Anatomy, UCLA School of Medicine, Los Angeles, CA 90024 **Effects of perinatal thyroxine and/or corticosterone treatment on the ontogenesis of hypothalamic and mesencephalic norepinephrine and dopamine content.** Developmental Neuroscience. 3(2):59-65, 1980.

Neonatal treatment with thyroxine and corticosterone significantly altered the developmental pattern for catecholamines in the hypothalamus and mesencephalon of Sprague-Dawley rats. Norepinephrine (NE) increased between postnatal days 16 and 45 in vehicle treated controls, but increased between days 16 and 21 in the hypothalamus and mesencephalon of rats treated with 10mcg/g thyroxine on days 8 to 10. Mesencephalic and hypothalamic dopamine (DA) showed no definite pattern. The NE content of both regions was higher in thyroxine treated rats than in controls between days 16 and 21; DA content was higher in the hypothalamus and lower in the mesencephalon of thyroxine treated animals than in controls during this period. Corticosterone treatment (20mcg/g on days 2 to 4) lowered the NE content of both regions, lowered the DA content in hypothalamus, and increased DA in the mesencephalon between days 16 and 21. Thyroxine treatment counteracted the effects of the corticosteroid in animals given both treatments. 22 references. (Author abstract modified)

000181 Leonard, J. P.; Desager, J. P.; Van Der Linden, L.; Harvengt, C. Laboratoire de Pharmacotherapie, Universite Catholique de Louvain, 53, Avenue E. Mounier B-1200 Brussels, Belgium **Amitriptyline binding to specific alpha-adrenergic receptors in vitro.** Life Sciences. 27(20):1875-1880, 1980.

Amitriptyline binding to specific alpha-adrenergic receptors in rabbit uterine membranes preparation was investigated. Amitriptyline and adrenergic agonists compete for (3H)dihydroergocryptine (3H-DHE), a potent alpha-adrenergic antagonist, binding sites in the following order of potency: epinephrine greater than norepinephrine greater than amitriptyline greater than ethylphenylephrine. Amitriptyline and alpha-antagonists and beta-antagonists compete in this order: phentolamine greater than phenoxybenzamine greater than amitriptyline greater than propranolol. Based on 50% inhibition values from binding competiton curves, the affinity of amitriptyline for alpha-adrenergic sites was 83 fold lower than phentolamine, but only tenfold lower than epinephrine. These data are consistent with the hypothesis that the hypotensive action of amitriptyline

results at least in part from alpha-adrenergic blockade. 12 references. (Author abstract modified)

000182 Lerner, Pauline; Major, Leslie F.; Ziegler, Michael; Dendel, Peter S.; Ebert, Michael H. F.D.A., HFF-458, 200 C St., S. W., Washington, DC 20204 **Central noradrenergic adaptation to long-term treatment with imipramine in rhesus monkeys.** Brain Research. 200(1):220-224, 1980.

Central noradrenergic adaption to long-term treatment with imipramine in rhesus monkeys was investigated. Rhesus monkeys were treated with the antidepressant drug imipramine, and cerebrospinal fluid (CSF) norepinephrine and dopamine beta-hydroxylase levels were measured to assess central noradrenergic activity. Large changes occurred after short-term, but not long-term, treatment. Biochemical stabilization occurred at the time when therapeutic effects are seen in patients. Results indicate that the immediate effects of imipramine are followed by changes of a compensatory nature. The compensatory changes cannot be explained completely by the increase in nonrepinephrine in the synaptic cleft secondary to uptake blockade, since the antidepressant iprindole does not block uptake. 21 references. (Author abstract modified)

000183 Leslie, Steven W.; Friedman, Mitchell B.; Coleman, Ronald R. Dept. of Pharmacology College of Pharmacy, University of Texas at Austin, Austin, TX 78712 **Effects of chlordiazepoxide on depolarization-induced calcium influx into synaptosomes.** Biochemical Pharmacology. 29(18):2439-2443, 1980.

The effects of chlordiazepoxide on depolarization-induced calcium influx into synaptosomes were investigated. Female, Swiss-Webster mice were randomly divided into three experimental groups; control, acute (received a single dose of chlordiazepoxide), and tolerant (received dietary chlordiazepoxide for 8 days). Synaptosomes were isolated from whole brains of mice for each group, and the inhibitory effects of chlordiazepoxide on KCl-induced 45Ca2 influx were examined. Both in vitro and acute in vivo chlordiazepoxide significantly inhibited KCl-induced 45Ca2 influx into synaptosomes isolated from control and acute mice, respectively. Chronic dietary chlordiazepoxide administration resulted in the development of tolerance to the inhibitory effects of chlordiazepoxide during the same time period that behavioral tolerance developed. Results suggest that chlordiazepoxide-induced sedation may be mediated, at least partially, by inhibition of calcium influx into nerve ends. In addition, tolerance to chlordiazepoxide sedation may be mediated by an adaption of the nerve end such that the degree of inhibition of calcium influx is reduced after chronic chlordiazepoxide administration. 17 references. (Author abstract modified)

000184 Leung, L. Stan.; Vanderwolf, C. H. Dept. of Psychology, University of Western Ontario, London N6A 5C2, Ontario, Canada **Behavior-dependent evoked potentials in the hippocampal CA1 region of the rat. II. Effects of eserine, atropine, ether and pentobarbital.** Brain Research. 198(1):119-133, 1980.

The correlations of the rat's behaviors and the hippocampal EEG with the averaged evoked potentials (AEPs) evoked by the Schaffer collaterals in the hippocampal CA1 region of the rat were studied after intraperitoneal injections of several drugs known to affect hippocampal EEG. Ether and eserine induced continuous train of rhythmical slow activity (RSA) of 5 to 6/sec in the hippocampal EEG, during which the AEPs showed waveforms intermediate between those elicited during large irregular activity (LIA) in the awake, immobile control and those elicited during walking in the control. Low dose nembutal and atropine induced high amplitude LIA during immobility, resembling EEG during slow-wave sleep. While much of the data of drug action on the hippocampus confirms the correspondence between AEP and EEG continua, atropine was found to dissociate the EEG and behavior from the AEP. It is suggested that the hippocampus normally received atropine sensitive (muscarinic, cholinergic) inputs together with atropine resistant inputs. Perhaps the AEP evoked by the stimulation of Schaffer colaterals is a sensitive neurophysiological indicator of the cholinergic input the hippocampal CA1 region receives. Implications for hypotheses concerning RSA and neurotransmitter functions are noted. 35 references. (Author abstract modified)

000185 Levi, Giulio; Gallo, Vittorio; Ciotti, Teresa; Raiteri, Maurizio. Laboratorio di Biologia Cellulare, CNR, Via Romagnosi 18/A, I-00196 Rome, Italy **GABA fluxes in presynaptic nerve endings from immature rats.** Journal of Neurochemistry. 33(5):1043-1053, 1979.

Several parameters of GABA fluxes across the synaptosomal membrane were compared in synaptosomes from adult and 8-day-old male Wistar rats. The essential features of GABA transport, including the ability to be modulated by cationic fluxes and extracelluar GABA, were fully developed in the synaptosomes of 8-day-old pups. However, the noncarrier mediated release of GABA induced by depolarization was not calcium dependent in the immature synaptosomes as it is in adult nerve endings. 43 references. (Autthor abstract modified)

000186 Leysen, J. E.; Gommeren, W.; Laduron, P. M. Dept. of Biochemical Pharmacology, Janssen Pharmaceutica, B-2340 Beerse, Belgium **Evidence for, and localization of, a unitary dopamine receptor composed of cooperatively linked subunit binding sites in rat striatum.** Archives Internationales de Pharmacodynamie et de Therapie. 242(2):312-314, 1979.

Localization and number of dopamine agonist and antagonist binding sites in rat striatum were studied by simultaneous investigation of high affinity stereospecific 3H-apomorphine and 3H-spiperone binding in the same preparation of washed membranes in different kinds of experiments. Since in various localization studies agonist and antagonist binding sites could not be differentiated, a new model for the dopaminergic receptor occurring at various types of membranes is proposed: a unitary receptor complex composed of cooperatively linked subunits for high affinity agonist and antagonist binding minimally comprised of two antagonist and one agonist site. 10 references.

000187 Lieberman, K. W.; Stokes, P. E.; Fanelli, C. J.; Klevan, T. Psychobiology Study Unit, Dept. of Psychiatry, Cornell University Medical College, 1300 York Ave., New York, NY 10021 **Reuptake of biogenic amines by brain slices: effect of hydrocortisone.** Psychopharmacology. 70(1):59-61, 1980.

The effect of hydrocortisone (HC) upon the reuptake of norepinephrine (NE), serotonin (5-HT), and dopamine (DA) was studied in brain slices. It is noted that the brain slice technique provides a convenient in vitro system for measuring the reuptake of neurotransmitters, a major mechanism for controlling the quantity of biogenic amines available in the synaptic cleft. HC had no detectable effect upon the reuptake of NE, 5-HT, or DA by hypothalamic tissue slices. These data are supportive of the findings of Janowsky and Davis (1970) but do not agree with those of Maas and Mednieks (1971). 10 references. (Author abstract modified)

000188 Liebman, J. M.; Pastor, G.; Bernard, P. S.; Saelens, J. K. Research Dept., Pharmaceuticals Division, CIBA-GEIGY Corp., Summit, NJ 07901 **Antagonism of intrastriatal and intravenous kainic acid by 1-nuciferine: comparison with various anticonvulsants and GABAmimetics.** Life Sciences. 27(21):1991-1998, 1980.

The effectiveness of l-nuciferine against kainic acid (KA) induced destruction of rat striatal cholinergic neurons was evaluated and compared with that of diazepam, phenobarbital, baclofen, haloperidol, and related substances. Drugs were administered intraperitoneally before and after intrastriatal microinjection of KA, and choline acetyltransferase activity in striatum was assessed 24 hr later. Among the substances tested, only l-nuciferine attenuated KA-induced depletions of striatal choline acetyltransferase. This effect was not secondary to anticonvulsant activity, because: 1) l-nuciferine did not block metrazol, maximal electroshock, or intravenous KA-induced seizures; and 2) anticonvulsants such as phenobarbital and diazepam, which are effective in these procedures, failed to modify KA-induced striatal neurotoxicity. l-Nuciferine antagonized certain other neurological effects of intravenous KA, but antagonism was also seen with some of the other drugs tested. Intrastriatal microinjection of KA and/or glutamate may offer a means to detect selective antagonism of KA and/or glutamate, as distinguished from simple anticonvulsant activity. 29 references. (Author abstract modified)

000189 Lin, M. T.; Chern, Y. F.; Wang, H. S.; Chandra, A. Dept. of Physiology and Biophysics, National Defense Medical Center, Taipei, Taiwan **Effects of gamma-hydroxybutric acid on metabolic, respiratory and vasomotor activities and body temperature in rats.** Journal of Pharmacology and Experimental Therapeutics. 211(1):167-170, 1979.

Gamma-hydroxybutyric acid (GHBA) produced a dose dependent hypothermia in male Sprague-Dawley rats at ambient temperatures of 8 or 22 degress C, but did not alter rectal temperature at an ambient temperature of 30 degress. Respiratory evaporative heat loss was not affected by GHBA. The GHBA-induced hypothermia was antagonized by haloperidol, but not by p-chlorophenylalanine. Results suggest that GHBA elicits central dopamine receptor activation by releasing endogenous dopamine. (Author abstract modified)

000190 Lin, Mao-Tsun. John B. Pierce Foundation Lab., Yale University, School of Medicine, New Haven, CT 06519 **Effects of brain monoamine depletion on thermoregulatory responses of rabbits to different hypothalamic temperatures.** Experimental Neurology. 70(2):226-235, 1980.

The thermoregulatory responses induced by alterations in hypothalamic temperature were measured in three groups of rabbits: untreated controls, treated with 5-7-dihydroxytryptamine (a serotonin depletor), and treated with 6-hydroxydopamine (a catecholamine depletor) at ambient temperatures of 2 degrees C or 22 degrees C. In the cold (2 degrees C, changes in metabolic rate (MR) occurring in response to alterations in hypothalamic temperature were used to delineate thermosensitivity. Rabbits after diencephalic serotonin (5-HT) depletion displayed a greater sensitivity of the MR than did control animals. In contrast, animals after diencephalic norepinephrine (NE) depletion had a lesser sensitivity of the MR than did the control animals. At room temperature (22 degrees C), the changes in respiratory evaporative heat loss and in ear blood flow occurring in response to alterations in hypothalamus temperature were used as the measure of thermosensitivity. In 5-HT depleted animals, the hypothalamus temperature threshold for the onset of vasodilation and panting was greatly decreased. In contrast, the temperature threshold for the onset of vasodilation and panting was greatly increased in NE depleted animals. Data indicate that diencephalic 5-HT and NE depletions alter the thermoregulatory responses to different hypothalamic temperatures in apparently reciprocal fashion. 20 references. (Author abstract modified)

000191 Loo, Yen Hoong; Fulton, Thomas; Miller, Katherine; Wisniewski, Henry M. New York State Institute for Basic Research in Mental Retardation, 1050 Forest Hill Road, Staten Island, NY 10314 **Phenylacetate and brain dysfunction in experimental phenylketonuria: synaptic development.** Life Sciences. 27(14):1283-1290, 1980.

The effects of injection of phenylacetate or its precursors, phenylalanine (with p-CPA) and phenylethylamine, during the first 21 days of life on the development of synapses were investigated in rats. High affinity uptake of choline, GABA, norepinephrine and serotonin into synaptosomes and ganglioside content of cortices served as indices of synaptic development. Both parameters indicated that phenylacetate and its precursors contribute to the retarded maturation of synapses in the cerebrum of the adult rat. In these rats, which also exhibit a pronounced deficit in learning capacity, the velocity of high affinity synaptosomal uptake of choline was reduced to a greater extent than that of GABA, and there was a profound decrease in the ganglioside content of cerebral cortex. In contrast, synaptic maturation and behavior of control and phenylpyruvate treated animals were similar. These findings lend strong support to the contention that phenylacetate, produced in excessive amounts in phenylketonuria, is most likely a primary cause of the mental retardation associated with phenylketonuria. 35 references. (Author abstract modified)

000192 Loscher, W. Laboratory of Pharmacology and Toxicology, School of Veterinary Medicine, Free University, Koserstrasse 20, D-1000 Berlin 33, Germany **Comparative study of the inhibition of GABA aminotransferase by different anticonvulsant drugs.** Archives Internationales de Pharmacodynamie et de Therapie. 243(1):48-55, 1980.

Fourteen anticonvulsant drugs were examined for their effects on the activity of gamma-aminobutyric acid (alpha-oxoglutarate aminotransferase (GABA-T). Only the nonspecific enzyme inhibitor aminooxyacetic acid proved to be as potent as the catalytic inhibitors gabaculine, gamma acetylenic GABA, and gamma-vinyl GABA with respect to inhibition of GABA-T. 2-Methyl-2-ethyl caproid acid, ethanolamine O-sulphate and isoniazid were less effective inhibitors of the GABA-T activity. None of the clinically established antiepileptic drugs tests (viz. phenobarbital, phenytoin, diazepam, valproate, trimethadione, dimethadione, and ethosuximide) produced inhibition comparable to the aforementioned drugs. It is reported that a slight inhibition of GABA-T was seen only with high concentrations of trimethadione, valproate, and ethosuximide. 28 references. (Author abstract)

000193 Lutz-Bucher, Bernadette; Koch, Bernard. Koch: Laboratoire de Physiologie, Universite Louis Pasteur, 21 rue Rene Descartes, F-67000 Strasbourg, France **Evidence for a direct inhibitory effect of morphine on the secretion of posterior pituitary hormones.** European Journal of Pharmacology. 66(4):375-378, 1980.

Morphine and endorphins blocked the release of vasopressin and oxytocin from incubated neurointermediate lobe and pars nervosa of male Wistar rat pituitary. This inhibitory action was reversed by naloxone. Results suggest that opiates exert a direct inhibitory influence on vasopressin and oxytocin secretions from the neurohypophysis. 11 references. (Author abstract modified)

000194 Macdonald, Robert L.; Barker, Jeffery L. Dept. of Neurology, Neuroscience Laboratory Building, University of Michigan 1103 East Huron, Ann Arbor, MI 48109 **Anticonvulsant and anesthetic barbiturates: different postsynaptic actions in cultured mammalian neurons.** Neurology. 29(4):432-447, 1979.

Mouse embryo spinal cord neurons grown in dissociated cell culture were used to study the effects of anticonvulsant barbiturates (phenobarbital and mephobarbital) and anesthetic barbiturates (pentobarbital, secobarbital, and 1,3-dimethyl-butylethyl barbituric acid) on amino acid responses and neuronal membranes. All barbiturates augmented responses to GABA and diminished glutamate responses, but the anesthetic barbiturates were more potent. The anesthetic barbiturates directly depressed excitability by increasing membrane conductance, and effect reversed by the GABA antagonists picrotoxin and bicuculline. Anticonvulsant barbiturates had only minimal GABA mimetic inhibitory action. 42 references. (Author abstract modified)

000195 Malik, Rita; Courtney, Kenneth R.; Jensen, Richard A. Jensen: SRI International, Menlo Park, CA 94025 **Imipramine affects autonomic control of sinoatrial rate in isolated right atrial preparations.** Journal of Pharmacology and Experimental Therapeutics. 211(2):284-289, 1979.

The effects of imipramine on sinoatrial rate and chrontropic responses to transmural stimulation (TS) were studied in the isolated guinea-pig atrial preparation. The negative chronotropic response (cholinergically mediated rate decrease) to TS was progressively inhibited by imipramine. The positive chronotropic response (adrenergically mediated rate increase) to TS was potentiated by therapeutic doses of imipramine but depressed by higher doses. High doses of imipramine also depressed the basal spontaneous rate in the presence or absence of autonomic blockers. 21 references. (Author abstract modified)

000196 Markey, S. P.; Colburn, R. W.; Kopin, I. J.; Aamodt, R. L. Laboratory of Clinical Science, Bldg. 10, NIMH, Bethesday, MD 20205 **Distribution and excretion in the rat and monkey of (82Br) bromocriptine.** Journal of Pharmacology and Experimental Therapeutics. 211(1):31-35, 1979

After radiolabled bromocriptine was administered intramuscularly to male rhesus monkeys and i.p. to male Sprague-Dawley rats, its tissue distribution, rate of excretion, and metabolism were studied. In both species (82Br) bromocriptine was predominantly concentrated in the liver, metabolized, and excreted through bile. Extractable free drug was undetectable in blood after 30 minutes. After 2 hours, the estimated concentration of free drug in rat brain was 0.00000002M. (Author abstract modified)

000197 Marwaha, Jwaharlal; Hoffer, Barry; Pittman, Randy; Freedman, Robert. Dept. of Pharmacology and Psychiatry, University of Colorado Health Sciences Center, 4200 E. Ninth Ave., Denver, CO 80262 **Age-related electrophysiological changes in rat cerebellum.** Brain Research. 201(1):85-97, 1980.

The spontaneous discharge of cerebellar Purkinje neurons was studied in 3-month-old, 12-month-old, 15-month-old, and 20-month-old rats. Fluphenazine and haloperidol administered intraperitoneally produced a dose dependent increase in the spontaneous discharge in 3-month-old animals, but were ineffective in 12-month-old, 15-month-old, and 20-month-old rats. Intraperitoneal administration of amphetamine resulted in a dose dependent decrease in spontaneous Purkinje neuron discharge in 3-month-old rats without affecting neurons from the older animals. Disruption of norepinphrine (NE) afferents by 6-hydroxydopamine or reserpine increased spontaneous discharge rate in 3-month-old animals, but not in 12-month-old, 15-month-old, or 20-month-old rats. Neurons from older rats were significantly less sensitive to inhibition by NE than were Purkinje neurons from 3-month-old animals. Results suggest a decreased postsynaptic sensitivity to NE in 12-month-old, 15-month-old, and 20-month-old rats as compared to 3-month-old animals. 28 references. (Author abstract modified)

000198 Mathers, David A.; Barker, Jeffery L. National Institute of Neurological and Communicative Disorders and Stroke, NIH, Bethesda, MD 20205 **(-)Pentobarbital opens ion channels of long duration in cultured mouse spinal neurons.** Science. 209(4455):507-509, 1980.

Intracellular recordings for voltage clamped mouse spinal neurons in tissue culture were used to study the membrane mechanisms underlying inhibitory responses to gamma-aminobutyric acid and the (-) isomer of pentobarbital. Fluctuation analysis suggests that both substances activated ion channels in the mebranes. However, the channels activated by pentobarbital remained open five times longer than those activated by gamma-aminobutyric acid. It is not yet clear how this occurs. 20 references. (Author abstract modified)

000199 Matsumoto, Akira; Eguchi, Toshio; Kuyama, Hideyuki; Fujimoto, Shunichiro; Onbe, Hideaki; Tsuchimoto, Shoji. Dept. of Neurological Surgery, Okayama University Medical School, Okayama, Japan **Effect of isoproterenol on cerebral circulation in dogs.** Brain and Nerve. 31(8):751-757, 1979.

The effects of two isoproterenol isomers (l-isoproterenol and dl-isoproterenol) on cerebral circulation were investigated in 13 mongrel dogs anesthetized with ketamine hydrochloride. Cerebral blood flow was measured by hydrogen clearance techniques and heat clearance techniques before and after intravenous injections of isoproterenol. Cerebral blood flow was also monitored by a new photoelectric technique. Increasing doses (from 0.05mg to 0.4mg) of l-isoproterenol were found to increase cerebral blood flow in a dose dependent fashdon. Both l-isoproterenol and dl-isoproterenol appear to dilate the cerebral vessels directly, resulting in increase of cerebral blood flow after intravenous administration. 16 references. (Autor abstract modified)

000200 McCulloch, James; Edvinsson, Lars. Wellcome Surgical Institute, University of Glasgow, Garscube Estate, Bearsden Rd., Glasgow, G61 1QH, Scotland **Cerebral circulatory and metabolic effects of piribedil.** European Journal of Pharmacology. 66(4):327-337, 1980.

The dopaminergic agonist piribedil (0.1 and 1mg/kg i.v.) caused a significant increase in cerebral blood flow and cerebral oxygen consumption in anesthetized baboons. These changes were accompanied by an increase in low voltage fast activity in the EEG. Pretreatment with pimozide (0.5mg/kg), a dopaminergic antagonist, had no direct effect on cerebral blood flow and oxygen consumption but prevented the circulatory, metabolic, and EEG alterations induced by piribedil. Piribedil and its metabolite S584 had no marked vasomotor actions in vitro in the isolated feline middle cerebral artery. 33 references. (Author abstract modified)

000201 McMillen, Brian A.; Shore, Parkhurst A. Dept. of Pharmacology, University of Texas Health Science Center, Dallas, TX 75235 **Role of dopamine storage function in the control of rat striatal tyrosine hydroxylase activity.** Naunyn-Schmiedeberg's Archives of Pharmacology. 313(1):39-44, 1980.

The recovery of responsiveness of the striatal dopaminergic system was studied in female Sprague-Dawley rats 3 to 27 days after a single injection of reserpine. Results suggested that inhibition of dopamine (DA) storage function by reserpine alters the coupling of DA autoreceptor activity with tyrosine hydroxylase. It is hypothesized that DA storage function modulates tyrosine hydroxylase activity by controlling the amount of DA

available for attachment to and inhibition of tyrosine hydroxylase. 29 references. (Author abstract modified)

000202 Melamed, Eldad; Hefti, Franz; Wurtman, Richard J. Wurtman: Room 56-245, Massachusetts Institute of Technology, Cambridge, MA 02139 **Decarboxylation of exogenous L-DOPA in rat striatum after lesions of the dopaminergic nigrostriatal neurons: the role of striatal capillaries.** Brain Research. 198(1):244-248, 1980.

The role of striatal capillaries in decarboxylation of exogenous dihydroxyphenylalanine (L-DOPA) in rat striatum after lesions of the dopaminergic nigrostriatal neurons was investigated. In rats with unilateral nigrostriatal lesions, L-DOPA-induced dopamine increases in ipsilateral striata were further enhanced after inhibition of DOPA decarboxylase in cerebral microvessels by carbidopa. DOPA levels were similar, but dopamine increases in lesioned striata were smaller, after carbidopa and DOPA than after DOPA alone. These findings suggest that after degeneration of dopaminergic terminals, striatal decarboxylation of exogenous DOPA occurs partly, but not exclusively, in the capillaries. 20 references. (Author abstract modified)

000203 Meller, Emanuel; Friedman, Eitan. Millhauser Laboratories, Dept. of Psychiatry, New York University School of Medicine, New York, NY 10016 **Striatal dopaminergic activity during withdrawal from chronic neuroleptic treatment in rats.** In: Fann, W., Tardive dyskinesia. New York, SP Medical and Scientific Books, 1980. 531 p. (p. 103-113).

Research is reported on the effect of antipsychotic drug treatment on dopaminergic neuronal activity in the corpus striatum, a topic of interest in elucidating a possible relationship between central dopaminergic function and schizophrenia. Rats were treated for several weeks with low to moderate doses of antipsychotics. On withdrawal, changes in postsynaptic dopaminergic activity (behavioral supersensitivity to apomoprhine) and two parameters of presynaptic activity (synaptosomal tyrosine hydroxylase (TH) activity and 3,4-dihydroxyphenylacetic acid (DOPAC) level) were measured. The results have implications for studies on the development of dopaminergic supersensitivity and tolerance to neuroleptic drugs, the therapeutic effect of neuroleptics in schizophrenia, and the appearance of tardive dyskinesia. 49 references.

000204 Melzacka, M.; Boksa, J.; Maj, J. Institute of Pharmacology, Polish Academy of Sciences, Dept. of Biochemistry, Smetna 12, 31-343 Krakow, Poland **1-(m-Chlorophenyl)piperazine: a metabolite of trazodone isolated from rat urine.** Journal of Pharmacy and Pharmacology. 31(12):855-856, 1979.

The metabolite 1-(m-chlorophenyl)piperazine (CPP) was isolated from the urine of male Wistar rats treated with the psychotropic drug trazodone (25mg/kg i.p.). In contrast to the inactive trazodone metabolite previously identified in rat urine, CPP induces central serotonergic stimulation similar to that seen after large doses of trazodone. Results are discussed in relation to routes of trazodone metabolism. 11 references.

000205 Miach, Peter J.; Dausse, Jean-Pierre; Cardot, Alain; Meyer, Philippe. Meyer: INSERM U7 Research Unit, Hopital Necker, 161 rue de Sevres, F-75015 Paris, France **3H-Prazosin binds specifically to rat brain.** Naunyn-Schmiedeberg's Archives of Pharmacology. 312(1):23-26, 1980.

The presence of two classes of alpha-adrenoceptors in male Wistar rat brain membranes was demonstrated. Tritiated prazosin bound specifically in a rapid, reversible, and saturable manner to a single class of high affinity sites. The 3H-prazosin binding was inhibited by WB4101, ARC239, phentolamine, piperoxane, and yohimbine in decreasing order of potency. In contrast, 3H-clonidine binding was inhibited by yohimbine, piperoxane, WB4101, ARC239, and prazosin, in decreasing rank order. Results indicate that 3H-prazosin binds to central alpha1-adrenoceptors, whereas 3H-clonidine binds to alpha2-adrenoceptors. 14 references. (Author abstract modified)

000206 Middlemiss, D. N.; Carroll, J. A.; Fisher, R. W.; Mounsey, I. J. Biochem. Dept., Imperial Chemical Industries Ltd., Pharmaceuticals Div., Mereside, Alderley Park, Macclesfield, Cheshire SK10 4TG, England **Does (3H)spiroperidol label a 5-HT receptor in the frontal cortex of the rat?** European Journal of Pharmacology. 66(2/3):253-254, 1980.

The displacement of 3H-spiroperidol from synaptosomal membranes of the rat frontal cortex by serotonin (5-HT) analogues was studied. Results showed that changes in the indole nucleus or on the amine side chain of 5-HT caused very little alternation in the potency of 5-HT analogues as displacers of 3H-spiroperidol binding. Since the 3H-spiroperidol binding site in frontal cortex has limited structural specificity for 5-HT analogues, the interaction of 5-HT with the 3H-spiroperidol binding site may be nonspecific. 3 references.

000207 Minneman, Kenneth P.; Hedberg, Anders; Molinoff, Perry B. University of Colorado Health Science Center, Dept. of Pharmacology, 4200 E. Ninth Ave., Denver, CO 80262 **Comparison of beta adrenergic receptor subtypes in mammalian tissues.** Journal of Pharmacology and Experimental Therapeutics. 211(3):502-508, 1979.

The pharmacological specificity of beta-1 and beta-2 adrenergic receptors was determined in a number of mammalian tissues by examining the inhibition of specific (125I)iodohydroxybenzylpindolol binding. Most tissues, including rat heart, lung, and cerebral cortex, contained both types of receptors. However, some tissues contained only beta-1 receptors (guinea-pig and cat left ventricle) or beta-2 receptors (rat liver, cat soleus muscle, and mature rat cerebellum). Drug affinities for beta-1 and beta-2 receptors were similar across tissues, supporting the hypothesis that there are only two subtypes of beta-adrenergic receptors in mammalian tissues. 24 references. (Author abstract modified)

000208 Mishra, Radhakanta; Janowsky, Aaron; Sulser, Fridolin. Vanderbilt University School of Medicine, Nashville, TN 37232 **Subsensitivity of the norepinephrine receptor-coupled adenylate cyclase system in brain: effects of nisoxetine versus fluoxetine.** European Journal of Pharmacology. 60(4):379-382, 1979.

The sensitivity of the norepinephrine (NE) receptor coupled adenylate cyclase system in male Sprague-Dawley rat cortex was reduced by chronic administration of the NE reuptake inhibitor nisoxetine. This effect was not related to a reduction in specific beta-adrenergic receptor binding. The specific serotonin reuptake inhibitor fluoxetine had no effect on neurohormonal sensitivity or on 3H-dihydroalprenolol binding. These findings with nisoxetine support the view that the delayed therapeutic action of antidepressant treatments may be related to a delayed change in central noradrenergic receptor function. 10 references. (Author abstract modified)

000209 Moises, Hylan C.; Woodward, Donald J.; Hoffer, Barry J.; Freedman, Robert. Dept. of Cell Biology, University of Texas Health Science Center, Dallas, TX 75235 **Interactions of norepinephrine with Purkinje cell responses to putative amino acid neurotransmitters applied by microiontophoresis.** Experimental Neurology. 64(3):493-515, 1979.

Norepinephrine (NE) enhanced the GABA-induced inhibition of rat Purkinje cells and antagonized the inhibition induced by

glycine when these substances were applied microiontophoretically. Glutamate evoked excitations and subsequent depressions were also augmented by NE. Dopamine did not facilitate the response to GABA. Results suggest that NE acts on postsynaptic processes to increase the responsiveness of the Purkinje cell to afferent input. 37 references. (Author abstract modified)

000210 Muramatsu, I.; Fujiwara, M.; Miura, A.; Shibata, S. Fujiwara: Dept. of Pharmacology, Faculty of Medicine, Kyoto University, Kyoto 606, Japan **Reactivity of isolated canine cerebral arteries to adenine nucleotides and adenosine.** Pharmacology. 21(3):198-205, 1980.

Adenosine triphosphate produced phasic contraction in the canine basilar artery and relaxation in the middle cerebral artery. Adenosine diphosphate (ADP), adenosine monophosphate, cyclic adenosine monophosphate, and adenosine caused relaxation in all preparations, except that ADP produced contractions in both arteries at high concentrations. These effects were observed in the presence or absence of active tension induced by serotonin. Theophylline partially inhibited relaxing responses but not contractile responses to the agents tested. Phentolamine, propranolol, atropine, tetrodotoxin, ouabain, and quinidine had little effect on contractile or relaxing responses. Results indicate that the canine cerebral artery responses to adenine nucleotides and adenosine and that the relaxing response is in part caused through theophylline sensitive receptors. 15 references. (Author abstract modified)

000211 Nakadate, Teruo; Kubota, Katsunari; Muraki, Takamura; Kato, Ryuichi. Dept. of Pharmacology, School of Medicine, Keio University, Shinanomachi, Shinjuku-ku, Tokyo 160, Japan **Mechanism of chlorpromazine action on plasma glucose and cyclic AMP levels.** European Journal of Pharmacology. 64(2/3):107-113, 1980.

The roles of the central nervous system and adrenal medulla in the mechanism of chlorpromazine (CPZ) action leading to changes of plasma glucose and cyclic AMP were investigated in mice. Findings suggest that CPZ acts on the central nervous system and increases plasma glucose and cyclic AMP through epinephrine release from the adrenal medulla. The elevations of plasma glucose and cyclic AMP induced by epinephrine were enhanced by CPZ. CPZ increased plasma glucose and cyclic AMP significantly at high room temperatures at which CPZ did not decrease body temperature. The mechanism of CPZ action is discussed in relation to the increase in the plasma glucose and cyclic AMP levels. 18 references. (Author abstract modified)

000212 Nakahara, Tatsuo; Kojima, Mikie; Uchimura, Hideyuki; Hirano, Makoto; Kim, Jan Soo; Matsumoto, Takashi. Uchimura: Laboratory of Neurochemistry, Hizen National Mental Hospital, Kanzaki, Saga 842-01, Japan **Interactions of oxypertine with rat brain monoamine receptors.** Biochemical Pharmacology. 29(19):2681-2683, 1980.

The effects of oxypertine on dopamine sensitive adenylate cyclase activity and (3H)spiroperidol binding in rat striatum and frontal cortex and on (3H)WB-4101 binding in rat cerebral cortex were investigated. Oxypertine was found to inhibit the dopamine sensitive adenylate cyclase in the striatum and frontal cortex. Oxypertine was less potent than haloperidol and slightly less potent than chlorpromazine in displacing (3H)spiroperidol binding from striatal membranes. Oxypertine was fivefold less potent than chlorpromazine and as potent as haloperidol in displacing (3H)WB-4101 binding from cerebral cortex membranes. Results suggest that compared to chlorpromazine, oxypertine is a weak blocker of dopamine and alpha-adrenergic receptors, but a relatively potent blocker of serotonin receptors. 19 references.

000213 Nelson, David L.; Herbet, Alain; Enjalbert, Alain; Bockaert, Joel; Hamon, Michel. Dept. of Pharmacology and Toxicology, College of Pharmacy, University of Arizona, Tucson, AZ **Serotonin-sensitive adenylate cyclase and (3H)serotonin binding sites in the CNS of the rat -- I. Kinetic parameters and pharmacological properties.** Biohemical Pharmacology. 29(18):2445-2453, 1980.

The serotonin (5-HT) receptor linked to adenylate cyclase and the high affinity binding site for (3H)5-HT were compared on the basis of their kinetic and pharmacological properties in the CNS of new born rats. Under normal assay conditions, the apparent affinity of 5-HT for its specific binding sites was much higher than that for the receptor coupled to adenylate cyclase. Guanosine triphosphate (GTP) affected both the binding of (3H)5-HT and the 5-HT sensitive adenylate cyclase. Results suggest that the 5-HT receptor linked to adenylate cyclase is not identical with that which is measured by the binding of (3H)5-HT and, thus, provides evidence for the possible existence of multiple receptors for 5-HT in the rat brain. 30 references. (Author abstract modified)

000214 Nelson, David L.; Herbet, Alain; Adrien, Joelle; Bockaert, Joel; Hamon, Michel. Dept. of Pharmacology and Toxicology, College of Pharmacy, University of Arizona, Tucson, AZ **Serotonin-sensitive adenylate cyclase and (3H)serotonin binding sites in the CNS of the rat -- II. Respective regional and subcellular distributions and ontogenetic developments.** Biochemical Pharmacology. 29(18):2455-2463, 1980.

The serotonin (5-HT) receptor linked to adenylate cyclase and the high affinity binding site of (3H)5-HT were compared on the basis of their localization and ontogenetic changes in the CNS of the rat. Subcellular fractionation of cerebral tissues from newborn rats showed a good correlation between the distributions of 5-HR sensitive cyclase and (3H)5-HT binding sites, with the mitochondrial fraction exhibiting the highest specific adenylate cyclase activity and density of binding sites. There was also a good correlation between the regional distributions of the cyclase and the binding in the CNS of newborn rats. In the cortex and hippocampus, there was little change in the amount of 5-HT sensitive adenylate cyclase during development whereas (3H)5-HT binding increased approximately sevenfold from birth to adulthood. The 5-HT sensitive adenylate cyclase but not the (3H)5-HT high affinity binding site appears to be preferentially associated with neurons destroyed by kainic acid, i.e., neurons intrinsic to the striatum. The findings that the 5-HT sensitive adenylate cyclase and the (3H)5-HT binding sites can develop independently and are localized, at least partly, on different types of cells provide additional evidence for the existence of multiple types of 5-HT receptors in the CNS of the rat. 30 references. (Author abstract modified)

000215 Nicolaou, Nicos M. Dept. of Psychiatry, Newcastle University, Royal Victoria Infirmary, Newcastle Upon Tyne, England **Acute and chronic effects of neuroleptics and acute effects of apomorphine and amphetamine on dopamine turnover in corpus striatum and substantia nigra of the rat brain.** European Journal of Pharmacology. 64(2/3):123-132, 1980.

The effects of chronic neuroleptic treatment on the concentrations of homovanillic acid (HVA) and 3,4-dihydroxy-phenylacetic acid (DOPAC) in the rat substantia nigra (SN) and corpus striatum (CS) were determined. Acute haloperidol and alpha-flupenthixol increased HVA and DOPAC in the CS but after chronic treatment no significant change was found compared to controls. In the SN, on the contrary, acute haloperidol reduced and subsequently increased HVA and DOPAC and alpha-flupenthixol had no significant effect, whereas chronic treatment with either neuroleptic increased the levels of the metabolites.

Acute apomorphine reduced HVA and DOPAC in CS, but increased first and subsequently decreased the levels of the metabolities DOPAC in CS, whereas striatal HVA was unaffected. It is suggested that the different or even reciprocal effects on DA release may point to an independent local action of these drugs in CS and SN. 25 references. (Author abstract)

000216 Nielsen, Erik, B.; Nielsen, Mogens; Ellison, Gaylord; Braestrup, Claus. Sct. Hans Mental Hospital, Psychopharmacological Research Lab., DK-4000 Roskilde, Denmark **Decreased spiroperidol and LSD binding in rat brain after continuous amphetamine.** European Journal on Pharmacology. 66(2/3):149-154, 1980.

Five days after male Wistar rats were implanted with silicone tubing pellets that continuously released amphetamine, the specific binding of spiroperidol and lysergic acid diethylamide was decreased in the corpus striatum and frontal cortex. In the striatum, the number of dopamine receptors was decreased but affinity was unchanged. Results indicate that dopamine and serotonin receptors can be regulated by release of their own neurotransmitter. 35 references. (Author abstract modified)

000217 Nieoullon, Anre; Dusticier, Nicole. Dept. de Neurophysiologie generale, INP, CNRS, 31, chemin Joseph Aiguier, F-13274 Marseille Cedex 2, France **Effects of alpha-chloralose on the activity of the nigrostriatal dopaminergic system in the cat.** European Journal of Pharmacology. 65(4):403-410, 1980.

The release of tritiated dopamine (3H-DA) from the caudate nucleus and substantia nigra of cats anesthetized with alpha-chloralose was compared with that in halothane anesthetized cats and in encephale isole preparations. The level of 3H-DA release from both regions was lowest in the alpha-chloralose group. The time required to reach a steady-state release of 3H-DA was longer in the alpha-chloralose cats than in the other two groups, indicating the activity of dopaminergic neurons was depressed by alpha-chloralose anesthesia. Electrical stimulation of the right forepaw did not significantly affect the release of 3H-DA from the caudate or substantia nigra in cats anesthetized with alpha-chloralose, although changes have been reported under halothane anesthesia. 14 references. (Author abstract modified)

000218 Nistico, G.; Ientile, R.; Rotiroti, D.; Di Giorgio, R. M. Institute of Pharmacology, Faculty of Medicine, University of Messina, Messina, Italy **GABA depletion and behavioural changes produced by intraventricular putrescine in chicks.** Biochemical Pharmacology. 29(6):954-957, 1980.

The acute effects of putrescine, a precursor of spermidine and spermine, following injection into chicks' III cerebral ventricle were assessed in regard to behavior, electrocortical activity and body temperature. At the time of peak effect, changes in the GABA system both in the diencephalon and brainstem, areas accessible from the third ventricle, and the effects on spermine and spermidine concentrations were studied. A dose dependent behavioral stimulation was observed, including increase in locomotor activity, vocalization, side to side jerks, and tachypnoea. This symptomatology started after a 5 to 10 minute period of sedation and lasted from 15 minutes to 2 hours according to the dose. In addition, frequent myoclonic movements of the limbs and clonic convulsions occurred during the first 2 hours. Electrocortical activity was characterized by high voltage continuous spikes activity. Body temperature was decreased up to two degrees for approximately 1 to 3 hours. A significant depletion of GABA occurred in the diencephalon, but not in the cerebral hemispheres, 30 minutes after putrescine administration. At that point, spermidine and spermine content of these brain areas were unaffected although putrescine concentration was increased 433%. The results lend support to the suggested role for polyamines as modulators or transmitters in CNS. 28 references.

000219 Noda, K.; Suzuki, A.; Okui, M.; Noguchi, H.; Nishiura, M.; Nishiura, N. Noguchi: Research Labs, Fujisawa Pharmaceutical Co. Ltd., 1-6, 2-Chome, Kashima, Yodogawa-Ku, Osaka 532, Japan **Pharmacokinetics and metabolism of 2-chloro-11-(2-dimethylaminoethoxy) dibenzo(b,f)thiepine (Zotepine) in rat, mouse, dog and man.** Arzneimittel-Forschung. 29(10):1595-1600, 1979.

Absorption, distribution, metabolism, and excretion of 2-chloro-11-(2-dimethylaminoethoxy)dibenzo(b,f)thiepine (zotepine), a new neurolptic agent, were investigated in rat, mouse, dog and man. Zotepine was absorbed rapidly and almost completely from the gastrointestinal tract in all species after oral dosing. The serum level of the unchanged drug in man was comparatively higher than in animals. The serum half lives of zotepine after iv dosing were approximately 3.2 h in rats, 1.5 h in mice, and 3.0 h in dogs. The drug and radioactive metabolites were rapidly distributed to the tissues of rats and mice, and the brain levels of the unchanged drug were about 20 to 30 times higher than the serum levels. Only small amounts of the unchanged drug were excreted in the urine in all species; fecal excretion through the bile was the main route of elimination of the drug and metabolites. Extensive biliary excretion and enterohepatic circulation of the radioactive compound were observed in rats. Zotepine was well metabolized in the body. Besides N-demethylation and oxygenation of the N and/or S atoms, hydroxylation of the aromatic ring and consecutive conjugation were important metabolic pathways of zotepine. 9 references. (Author abstract modified)

000220 O'Callaghan, James P.; Chess, Quintus; McKimmey, Christine; Clouet, Doris H. Clouet: 80 Hanson Place, Brooklyn, NY 11217 **The effects of opiates on the levels of cyclic 3':5'-guanosine monophosphate in discrete areas of the rat central nervous system.** Journal of Pharmacology and Experimental Therapeutics. 210(3):361-367, 1979.

Acute administration of morphine produced a dose and time dependent reduction of cyclic guanosine monophosphate (cGMP) levels in the periaqueductal gray (PAG) and centromedian thalamus, but not in the caudate putamen, ventromedial hypothalamus, lateral hypothalamus or pituitary. The morphine effects were blocked by pretreatment with naloxone. Levorphanol mimicked the effect of morphine on cGMO in the PAG, but its stereoisomer, dextrophan, did not. The mixed agonist/ antagonist drugs pentazocine and cyclazocine also caused a selective reduction of cGMP in the PAG. Results suggest that some of the analgesic effects of opiates are mediated by a cGMP system in the PAG. 68 references. (Author abstract modified)

000221 Oka, Tetsuo. Dept. of Pharmacology, School of Medicine, Tokai University, Isehara, Kanagawa 259-11, Japan **Enkephalin receptor in the rabbit ileum.** British Journal of Pharmacology. 68(2):193-195, 1980.

The effects of the classical morphine-like compounds and opioid peptides on the electrically-induced contractions of the myenteric plexus longitudinal muscle strip of the rabbit ileum were studied. Results indicate that the rabbit ileum contains the new type of opiate receptor, which is not sensitive to morphine but is sensitive to enkephalins, and provides evidence that the enkephalins may function as neurotransmitters in the intestine. The action of the enkephalins was antagonized by relatively high doses of naloxone. 9 references. (Author abstract)

000222 Olney, J. W.; Fuller, T. A.; Collins, R. C.; de Gubareff, T. Washington University School of Medicine, Dept. of Psychiatry, St. Louis, MO 63110 **Systemic dipiperidinoethane mimics**

the convulsant and neurotoxic actions of kainic acid. Brain Research. 200(1):231-235, 1980.

The possible relationship between kainic acid (KA) and dipiperidinoethane (DPE) neurotoxicity was investigated. Rats receiving subcutaneous DPE without diazepam pretreatment manifested the limbic seizure syndrome that is characteristically seen in rats treated with KA; these seizures typically progressed to status epilepticus of such a severe degree that the animals had to be sacrificed in terminal condition from 2 to 8 hr after DPE injection. In contrast, diazepam pretreated animals manifested no symptoms other than an occasional isolated jerking motion of the head and upper torso. Pretreated rats showed no discernible histopathological changes, while brains of animals not pretreated with diazepam showed cytopathological changes similar in pattern to those found in KA treated rats. Paradoxically, rats receiving DPE injections into the amygdala or striatum manifested no convulsions or other untoward signs and appeared healthy when sacrificed 24 hr postinjection. Implications for clinical management and experimental study or seizure disorders are noted. 11 references.

000223 Pardal, Julio Fernandez; Granata, Antonio R.; Barrio, Avelino; Gimeno, Alvaro L. CENAI, CONICET, Serrano 665, 1414 Buenos Aires, Argentina **Metabolism of 3H-noradrenaline released from isolated rat hypothalamus by extracts of black widow spider glands.** Naunyn-Schmiedeberg's Archives of Pharmacology. 313(1):27-31, 1980.

In the isolated male Wistar rat hypothalamus preincubated with 3H-noradrenaline, an extract from the venom glands of the black widow spider (Latrodectus mactans) elicited an overflow of tritium containing 70% to 71% 3H-noradrenaline and 18% 3H-3,4-dihydroxyphenylglycol. Exposure to cocaine or pargyline diminished the formation of 3H-3,4-dihydroxyphenylglycol, suggesting the glycol is formed presynaptically after neuronal reuptake of the transmitter released by the venom. Results suggest that the venom depolarizes the noradrenergic neurons of the rat hypothalamus eliciting the calcium dependent release of 3H-noradrenaline. 20 references. (Author abstract modified)

000224 Pastuszko, Anna. Dept. of Neurochemistry, Medical Research Center, Polish Academy of Sciences, Dworkowa 3, 00-784 Warsaw, Poland **Action of barbiturates on activity of acetylcholinesterase from synaptosomal membranes.** Neurochemical Research. 5(7):769-776, 1980.

The actions of barbiturates on the activity of acetylcholinesterase from synaptosomal membranes were investigated. The acetylcholinesterase from synaptosomal membranes is inhibited by anesthetics such as nembutal, brietal, and thiopental. Nembutal and brietal decrease the Km for acetylthiocholine, without changes in Vmax. A noncompetitive type of inhibition is produced by thiopental. This anesthetic decreases Arrhenius plot discontinuity by about 4 degrees C and increases activation energies. Nembutal and brietal do not change Arrhenius plot discontinuities, but they increase activation energies. These results suggest that barbiturates change lipid/protein interactions in synaptosomal membranes. 27 references. (Author abstract modified)

000225 Paul, Steven M.; Marangos, Paul J.; Skolnick, Phil; Goodwin, Frederick K. Clinical Psychobiology Branch, National Institute of Mental Health, Bethesda, MD 20205 **Brain-specific benzodiazepine receptors and putative endogenous** Psychopharmacology Bulletin. 16(1):9-20, 1980.

The existence of a substance or substances which bind to CNS benzodiazepine receptors and functions as a physiological ligand was investigated. Evidence is presented that brain specific benzodiazepine receptors can be demonstrated in the intact rat under physiological conditions. Occupation of these receptors by various benzodiazepines was found to be directly correlated to their clinical and behavioral effects. It is reported that the brain contains endogenous benzodiazepine-like substances capable of interacting with the benzodiazepine receptor and producing pharmacological effects similar to those of the benzodiazepines themselves. These findings support the existence of a heretofore unidentified neuronal system that may be involved in the pathogenesis of seizure disorders and neurotic anxiety. 24 references.

000226 Pedigo, Norman W.; Schallert, Timothy; Overstreet, David H.; Ling, Nicholas C.; Ragan, Paul; Reisine, Terry D.; Yamamura, Henry I. Dept. of Pharmacology, College of Medicine, University of Arizona Health Sciences Center, Tucson, AZ 85724 **Inhibition of in vivo 3H-spiperone binding by the proposed antipsychotic des-tyr1-gamma-endorphin.** European Journal of Pharmacology. 60(4):359-364, 1979.

The potential antipsychotic neuropeptide des-tyrosine(1)-gamma-endorphin inhibited the in vivo binding of 3H-spiperone in the hypothalamus, corpus striatum, and mesolimbic areas of male Sprague-Dawley rat brain. The neuroleptic drug haloperidol produced similar effects in these areas, as well as in the frontal cortex. Haloperidol was considerably more potent than des-tyrosine(1)-gamma-endorphin and produced postural and motor abnormalities not seen with the neuropeptide. It is suggested that des-tyrosine(1)-gamma-endorphin may act indirectly, with a selective neuroleptic-like action at 3H-spiperone binding sites. 11 references. (Author abstract modified)

000227 Pelayo, Francisco; Dubocovich, Margarita L.; Langer, Salomon Z. Biology Department Synthelabo (L.E.R.S.), 58, rue de la Claciere, Paris, France **Inhibition of neuronal uptake reduces the presynaptic effects of clonidine but not of alpha-methylnoradrenaline on the stimulation-evoked release of 3H-noradrenaline from rat occipital cortex slices.** European Journal of Pharmacology. 64(2/3):143-155, 1980.

The interaction between clonidine and drugs, such as cocaine, desipramine, and amphetamine, that inhibit neuronal uptake of noradrenaline at the level of the stimulation evoked release of 3H-noradrenaline in the central nervous system, was investigated. Clonidine reduced the release of 3H-noradrenaline evoked by electrical stimulation from the rat cerebral cortex. Exposure to the three drugs significantly increased the stimulation evoked overflow of tritium. These uptake inhibitors antagonized the effects of clonidine on stimulation evoked 3H-noradrenaline release but failed to modify the inhibition induced by the catecholamine alpha-methylnoradrenaline. Inhibition of monoamine oxidase by preincubation of cerebral cortex slices with 0.5 mM pargyline significantly increased the stimulation evoked overflow of tritium, but clonidine was as effective as in the controls in inhibiting 3H-noradrenaline overflow. Since the catecholamine alpha-methylnoradrenaline inhibited neurotransmission in the presence of desipramine or cocaine, it is concluded that inhibition of neuronal uptake of noradrenaline antagonized selectively the preynaptic inhibitory effects of imidazolines on alpha-2-adrenoceptors. 49 references. (Author abstract modified)

000228 Pendleton, R. G.; Miller, D. A.; Ridley, P. T. Smith Kline and French Laboratories, Box 7929, Philadelphia, PA 19101 **Studies on the putative anticholinergic effects of desmethylimipramine.** Archives Internationales de Pharmacodynamie et de Therapie. 243(1):37-47, 1980.

Demethylimipramine (DMI) and atropine were compared in a variety of organ system tests in rats and mice involving muscarinic receptor function in order to assess the anticholinergic-like activity of this tricyclic antidepressant drug. DMI was similar to

atropine in maximally inhibiting basal gastric acid secretion and markedly protecting against restraint-induced stomach ulceration. It did not, however, substantially increase pupil size, reduce fecal pellet output, inhibit cholinergically-induced salivation, or specifically antagonize the CNS effects of carbachol and oxotremorine as did atropine. From these data and previous work indicating that DMI acts at a site in the central nervous system to inhibit gastric acid secretion, it is concluded that the biological effects of this drug are not mediated through an atropine-like mechanism. 21 references. (Author abstract)

000229 Perkins, Martin N.; Stone, Trevor W. Dept. of Physiology, St. George's Hospital Medical School, Cranmer Terrace, London SW17 ORE, England **Blockade of striatal neurone responses to morphine by aminophylline: evidence for adenosine mediation of opiate action.** British Journal of Pharmacology. 69(1):131-137, 1980.

The responses of cortical and striatal neurons to morphine and adenosine applied iontophoretically were studied in the male rat. The majority of cells (57%) within the corpus striatum were profoundly inhibited, and a smaller proportion (18%) excited by morphine. Adenosine depressed the firing rate of 30/44 cells in the striatum, excitation never being observed. In contrast, the responses of cortical cells to morphine were typically weak and required longer ejection pulses to effect comparable changes in firing rate. Aminophylline applied iontophoretically, as an anion, proved able to antagonize reversibly both morphine and adenosine in parallel. On a number of cells, GABA was used as a control depressant but aminophylline did not appear to reduce these responses. It is concluded that a consequence of the interaction of morphine with its receptors may be the release of adenosine which subsequently produces the inhibition observed with morphine. 41 references. (Author abstract modified)

000230 Peroutka, Stephen J.; Snyder, Solomon H. Dept. of Pharmacology and Experimental Therapeutics, Johns Hopkins University School of Medicine, Baltimore, MD 21205 **Long-term antidepressant treatment decreases spiroperidol-labeled serotonin receptor binding.** Science. 210(4465):88-90, 1980.

Antidepressant affinities for neurotransmitter receptor binding sites were studied in male Sprague Dawley rats and the effect of long-term drug treatment on neurotransmitter receptor binding was examined in rat brain. It was found that antidepressants compete at several neurotransmitter receptor binding sites, but drug affinities do not correlate with clinical efficacy. Long-term, but not short-term, antidepressant treatment decreases the numbers of both serotonin and beta-adrenergic receptors. The decrease in the number of receptor sites is reported to be most marked for (3H)spiroperidol labeled serotonin receptors and to be characteristic for antidepressants of several classes. 21 references. (Author abstract modified)

000231 Persson, B.; Henning, M. Dept. of Pharmacology, University of Goteborg, Fack, S-400 33 Goteborg, Sweden **Effect of GABA analogues on blood pressure and central GABA metabolism in the rat.** Acta Pharmacologica et Toxicologica. 47(2):135-143, 1980.

After systemic or intracerebroventricular administration in male Sprague-Dawley rats, gamma-hydroxybutyric acid (GHBA) and baclofen caused hypertension and tachycardia, whereas GABA and muscimol caused hypotension. The hypertension induced by GHBA and baclofen was not reduced by picrotoxin, bicuculline, 3-mercaptopropionic acid, or aminooxyacetic acid (AOAA). A subconvulsive dose of picrotoxin increased whole brain GABA accumulation and antagonized the inhibition induced by GHBA or muscimol. GHBA and baclofen in combination with AOAA increased striatal dopamine levels, and this effect was not prevented by picrotoxin or bicuculline. Results suggest that the cardiovascular actions of GHBA are not mediated by mechanisms identical to those of muscimol or exogenous GABA, but may involve different GABA receptor population. 50 references. (Author abstract modified)

000232 Pestronk, Alan; Drachman, Daniel B. Dept. of Neurology, Johns Hopkins University School of Medicine, Baltimore, MD 21205 **Lithium reduces the number of acetylcholine receptors in skeletal muscle.** Science. 210(4467):342-343, 1980.

An attempt was made to determine whether lithium alters the denervation-induced increase in the number of extrajunctional acetylcholine receptors in skeletal muscle. While extended treatment of rats with lithium inhibited the increase in the number of extrajunctional acetylcholine receptors that occurred in their denervated skeletal muscle, lithium reduced the number of acetylcholine receptors in normal muscle at neuromuscular junctions. It is suggested that these changes are a relatively specific effect of lithium on the turnover of receptors; that skeletal muscle provides an accessible system for analyzing the role of lithium (and other cations) in the regulation of cell surface receptors; and that this regulation plays a role in the mechanism by which lithium prevents recurrent manic-depressive episodes. 11 references. (Author abstract modified)

000233 Phillis, J. W. Dept. of Physiology, College of Medicine, University of Saskatchewan, Saskatoon, Saskatchewan, Canada S7N 0W0 **Diazepam potentiation of purinergic depression of central neurons.** Canadian Journal of Physiology and Pharmacology. 57(4):432-435, 1979.

Intravenously or iontophoretically applied diazepam potentiated the depressant action of iontophoretically applied 5'-AMP on the spontaneous firing of male Sprague-Dawley rat cerebral cortical neurons. This potentiation of purinergic depression may be the result of diazepam-induced inhibition of adenosine uptake into brain tissues. The therapeutic actions of diazepam may be related to a potentiation of the effects of purinergic intracellular mediators. 18 references. (Author abstract modified)

000234 Phillis, J. W.; Jiang, Z. G.; Chelack, B. J.; Wu, P. H. Dept. of Physiology, College of Medicine, University of Saskatchewan, Saskatoon, Saskatchewan, Canada S7N 0W0 **The effect of morphine on purine and acetylcholine release from rat cerebral cortex: evidence for a purinergic component in morphine's action.** Pharmacology Biochemistry and Behavior. 13(3):421-427, 1980.

The effect of morphine on purine and acetylcholine release from rat cerebral cortex was investigated. Morphine enhanced the release of adenosine and its metabolites from the rat cerebral cortex and inhibited the release of acetylcholine. Naloxone antagonized caffeine and theophylline, reduced morphine's effects on acetylcholine release, and at the same time, increased the spontaneous release of acetylcholine. It is suggested that morphine, acting at a naloxone sensitive site, enhances the level of extracellular adenosine, which in turn inhibits the release of acetylcholine, and that some of morphine's actions are mediated by a purinergic step. 26 references. (Author abstract modified)

000235 Pimoule, Carmen; Briley, M.; Arbilla, Sonia; Langer, S. Z. Langer: Dept. of Biology, Synthelabo LERS, 58, rue de la Glaciere, F-75013 Paris, France **Chronic sympathetic denervation increases muscarinic cholinoceptor binding in the rat submaxillary gland.** Naunyn-Schmiedeberg's Archives of Pharmacology. 312(1):15-18, 1980.

Muscarinic cholinoceptor binding of 3H-quinuclidinylbenzilate (3H-QNB) in the male Sprague-Dawley

rat submaxillary gland was studied after sympathetic denervation by superior cervical ganglionectomy. The binding of 3H-QNB was increased by 50% 6 weeks after unilateral denervation, compared to the contralateral, innervated gland. Dissociation constant values did not differ between the innervated and denevervated glands. Results suggest that changes in muscarinic cholinoceptor density may be involved in the postsynaptic supersensitivity to cholinoceptor agonists seen after chronic sympathetic denervation. 20 references. (Author abstract modified)

000236 Pomeranz, B.; Gurevich, N. Dept. of Zoology, University of Toronto, Toronto, Ontario, Canada M5S 1A1 **Effects of enkephalin analogue and naloxone on cat spinal cord dorsal root potentials.** European Journal of Pharmacology. 60(4):307-313, 1979.

Intravenous administration of the enkephalin analogue (D-Ala2,MePhe4,Met(0)5-ol)-enkephalin (FK33824) resulted in depressed dorsal root potentials in the cat spinal cord. Small i.v. doses of naloxone reversed this depression, but had no effects when given alone. A second injection of FK33824 was much less effective than the first dose. Results are discussed in relation to presynaptic mechanisms of analgesia, and it is suggested that FK33824 causes presynaptic inhibition by modulation rather than by depolarization of primary afferent fibers. 14 references. (Author abstract modified)

000237 Powers, C. Andrew; Johnson, Donald C. Johnson: Dept. of Obstetrics and Gynecology, University of Kansas Medical Center, 39th and Rainbow, Kansas City, KS 66103 **Release of gonadotropin-releasing hormone by veratrine in a hypothalamic-pituitary coincubation.** European Journal of Pharmacology. 66(2/3):161-167, 1980.

The effects of veratrina and veratridine on the release of gonadotropin releasing hormone (GnRH) and luteinizing hormone (LH) from incubations of female rat pituitary, hypothalamus, and pituitary plus hypothalamus were studied. Veratrine produced small increases in LH secretion from pituitary preparations and caused a calcium dependent release of GnRH from the hypothalamus. When the pituitary and hypothalamus were incubated together, veratrine produced large increases in LH secretion; veratridine produced large increases in the release of GnRH and LH from the hypothalamic/pituitary coincubations. The direct effect of veratridine on pituitary LH release was greater than that of veratrine. 17 references. (Author abstract modified)

000238 Prasad, Vineeta; Sheard, Michael H. Dept. of Psychiatry, Yale University of School of Medicine, New Haven, CT 06510 **The acute and chronic effect of lithium on serum testosterone in rats.** Communications in Psychopharmacology. 4(2):147-152, 1980.

Serum levels of testosterone (T) were determined in rats following acute and chronic administration of lithium either in drinking water or in the diet. The duration of drug treatment for the acute group was up to 1 week, and for the chronic group 5 1/2 weeks. A significant reduction occurred in the serum levels of T on day 6, 8, 10, and 12 of the group treated for 1 week, whereas chronic treatment with lithium resulted in no significant difference in serum levels of T from controls. 12 references. (Author abstract)

000239 Preskorn, Sheldon H.; Hartman, Boyd K.; Clark, H. Brent. Dept. of Psychiatry, University of Kansas School of Medicine, Kansas City, KS 66103 **Long-term antidepressant treatment: alterations in cerebral capillary permeability.** Psychopharmacology. 70(1):1-4, 1980.

Chronic treatment of rats with amitriptyline induced a persistent increase in the diffusibility of water into the brain. This effect was observable 12 h after the last dose. Amitriptyline induces this alteration at plasma drug concentrations of 71 plus or minus 13ng/ml, well within the therapeutic range for man (100 to 250ng/ml). Furthermore, chronic treatment potentiated the increase observed after acute drug administration and resulted in a 350% enhancement in the permeability of water across the cerebral capillary. Thus, long-term antidepressant administration can chronically influence cerebral function by affecting capillary permeability. 10 references. (Author abstract modified)

000240 Proudfit, Herbert K. Dept. of Pharmacology, University of Illinois at the Medical Center, Chicago, IL 60637 **Reversible inactivation of raphe magnus neurons: effects on nociceptive threshold and morphine-induced analgesia.** Brain Research. 201(2):459-464, 1980.

The capacity of morphine to induce analgesia was examined following reversible inactivation of raphe magnus neurons by microinjection of the local anesthetic tetracaine. Rats were given morphine at the peak of the analgesia, tetracaine was slowly infused into the raphe magnus. Analgesia measured up to 45 min later was unaltered by the tetracaine injection. However, when tetracaine was injected locally into the raphe magnus in the absence of morphine pretreatment, the animals exhibited hyperalgesia. This effect was observed immediately after the injection of tetracaine and declined to preinjection values by 45 min. The failure of tetracaine-induced inhibition of raphe magnus neurons or acute raphe magnus lesions to alter morphine-induced analgesia indicates that the raphe magnus is not directly involved in mediating the antinociceptive actions of opiates. Therefore, it is suggested that the raphe spinal neurons constitute a system which is capable of modulating pain transmission, but which is separate from the neuronal system which mediates opiate-induced analgesia. 13 references.

000241 Quach, T. T.; Duchemin, A. M.; Rose, C.; Schwartz, J. C. Unite 109 de Neurobiologie, Centre Paul Broca de l'INSERM, 2ter, rue l'Alesia F-75014 Paris, France **In vivo occupation of cerebral histamine H1-receptors evaluated with 3H-mepyramine may predict sedative properties of psychotropic drugs.** European Journal of Pharmacology. 60(4):391-392, 1979.

The binding of tritiated mepyramine (3H-MEP) to cortical histamine H1 receptors in live mice was inhibited by more than 50% by therapeutic doses of H1 antihistamines. Administration of several tricyclic antidepressants and neuroleptics also resulted in substantial occupation of cerebral H1-receptors, and this effect was correlated with the sedative side-effects of these drugs. Results suggest that cerebral histamine neurons may be involved in the control of wakefulness and that 3H-MEP binding may be a useful test for predicting the sedative properties of psychotropic drugs. 5 references.

000242 Queisnerova, M.; Dlabac, A.; Roubal, Z. Research Institute for Pharmacy and Biochemistry, Prague, Czechoslovakia **Comparison of blood and bile levels of oxyprothepin and docloxythepin in rats.** Activitas Nervosa Superior. 21(3):129-130, 1979.

The blood and bile levels of oxyprothepin and docloxythepin (Czechoslovakian neuroleptic drugs) in rats were assessed during the first 6 hours following administration via gastric cleavage. Blood levels of oxyprothepin were higher than levels of docloxythepin at all intervals (1, 2, 4, and 6 hours postadministration). For both neuroleptics, blood levels were maximal 4 hours after treatment. Bile levels of docloxythepin were higher than levels of oxyprothepin at all intervals. Results indicate that the entero/hepatal cycle is more pronounced in docloxythepin than in oxyprothepin. 4 references.

000243 Quirion, R.; Rioux, F.; Regoli, D.; St-Pierre, S. Dept. of Physiology and Pharmacology, Faculty of Medicine, University of Sherbrooke, Sherbrooke, Quebec, Canada J1H 5N4 **Compound 48/80 inhibits neurotensin-induced hypotension in rats.** Life Sciences. 27(20):1889-1895, 1980.

The acute or chronic administration of compound 48/80, a well known mast cell depletor, was found to completely abolish the hypotensive effect of low to medium doses of neurotensin (NT) and to unmask the previously unknown hypertensive effect of high doses of NT. This hypertensive effect was a selective antagonist of NT. The hypotensive action of NT in control rats was also significantly reduced by pretreating the animals with disodium cromoglycate, an antiallergic drug which is believed to stabilize mast cell membranes, or with a mixture of azatadine and methysergide. Results suggest that participation of histamine, serotonin and possibly other endogenous vasoactive substances, to the hypotensive action of NT in rats. 17 references. (Author abstract modified)

000244 Radulovacki, Miodrag; Walovitch, Richard; Yanik, George. Dept. of Pharmacology, University of Illinois at the Medical Center, Chicago, IL 60680 **Caffeine produces REM sleep rebound in rats.** Brain Research. 201(2):497-500, 1980.

The effect of caffeine on REM sleep in rats was investigated using rats subjected to a 24 h REM sleep deprivation procedure. Caffeine was administered to 24 h REM sleep deprived rats in a dose that effectively suppressed REM sleep for the first 6 h, and a significant rebound of REM sleep was observed 12 h later. In addition, caffeine significantly increased wakefulness and decreased slow-wave sleep during the initial 12 h following REM sleep deprivation. Results indicate that caffeine only temporarily suppressed REM sleep rebound by delaying its appearance for 12 h which corresponds to the duration of the drug's action on wakefulness and slow-wave sleep. 14 references.

000245 Rajkowski, Janusz. Dept. of Neurophysiology, Nencki Institute of Experimental Biology, Pasteura 3, 02-093 Warsaw, Poland **The influence of chloralose anesthesia on the activity of red nucleus neurons in cats.** Acta Neurbiologiae Experimentalis. 40(2):535-541, 1980.

The influence of chloralose anesthesia on the activity of red nucleus neurons in cats was investigated. In unanesthetized cats, peripheral stimulation typically evokes short-latency excitation followed by short inhibition. After administration of chloralose, a gradual formation of long-lasting excitatory/inhibitory/excitatory response was observed. In addition, receptive field widens and response changes result in the development of a characteristic reponse pattern for interposital, rubral, reticular, and other neurons in chloralose anesthetized animals. 8 references. (Author abstract modified)

000246 Ramirez-Gonzalez, Maria Dolores; Widy-Tyszkiewicz, Ewa; Sourkes, Theodore L.; Almazan, Guillermina. Sourkes: McGill University, Dept. of Psychiatry, 1033 Pine Ave. West, Montreal, Quebec, Canada H3A 1A1 **Effect of oxotremorine on ornithine decarboxylase activity of the adrenal gland in rat.** Journal of Neurochemistry. 35(1):193-201, 1980.

The effect of oxotremorine on ornithine decarboxylase (ODC) activity of the rat adrenal gland was investigated. Oxotremorine increased medullary ODC activity maximally at 2 h, while cortical enzyme responded much more slowly. Blockade of peripheral muscarinic receptors with methylatropine partially reduced the response to oxotremorine in the medulla, but not in the cortex. Hypophysectomy abolished the cortical, but not the medullary responses to oxotremorine. In unilaterally splanchnicotomized rats, oxotremorine caused an increase of ODC activity of the denervated adrenal gland relative to control value; activites in both medulla cortex were significantly lower than those observed in the innervated gland. Surgical intervention, in the form of a sham operation for transection of the spinal cord, leads to an increase of ODC activity in both parts of the adrenal gland. The additional increase of medullary ODC activity owing to the administration of oxotremorine to sham operated rats is partially reduced in the adrenal medulla, and completely in the cortex, by muscarinic blockade. 44 references. (Author abstract modified)

000247 Rastogi, S. K.; Puri, J. N.; Sinha, J. N.; Bhargava, K. P. Dept. of Pharmacology, G.S.V.M. Medical College, Kanpur, India **Involvement of central cholinoceptors in metrazol-induced convulsions.** Psychopharmacology. 65(1):215-217, 1979.

The involvement of central cholinoceptors in metrazol-induced convulsions, an established experimental model for the screening of anticonvulsant drugs, was investigated. Atropine sulphate afforded 90% protection against clonic convulsions induced by standard doses of metrazol in mice, whereas atropine methonitrate did not offer any protection. Furthermore, physostigmine caused recurrence of convulsions in atropinzed metrazol treated mice and converted the subconvulsvie dose of metrazol into a 100% convulsive dose. However, neostigmine did not antagonize the protection afforded by atropine sulphate against metrazol. Results suggest an involvement of central cholinergic mechanisms in metrazol-induced convulsions. 14 references. (Author abstract modified)

000248 Ribereau-Gayon, G.; Palfreyman, M. G.; Zraika, M.; Wagner, J.; Jung, M. J. Centre de Recherche Merrell International, 16 rue d'Ankara, F-67084 Strasbourg-Cedex, France **Irreversible inhibition of aromatic-L-amino acid decarboxylase by alpha-difluoromethyl-DOPA and metabolism of the inhibitor.** Biochemical Pharmacology. 29(18):2465-2469, 1980.

The irreversible inhibition of aromatic-L-amino acid decarboxylase (AADC) by alpha-difluoromethyl-DOPA (DFMD) and the metabolism of the inhibitor were investigated. In vitro, DFMD, at concentrations from 2 to 20 microM, inhibits AADC in a time dependent manner. After inhibition, the activity of the enzyme cannot by restored by dialysis. The inhibition is prevented by addition of an excess of the substrate L-DOPA. Near to one mole of ring tritiated DFMD binds to one mole of enzyme during the inhibition process. The absorption spectrum of AADC is slightly modified by DFMD. No transformation product of the inhibitor is accumulated during incubation with the enzyme. It is concluded that DFMD is an enzyme activated inhibitor of AADC. In vitro and in vivo DFMD is a substrate of catechol O-methyltransferase. 11 references. (Author abstract modified)

000249 Richards, R. K. Division of Clinical Pharmacology, Dept. of Anesthesia, Stanford University Medical Center, Stanford, CA 94305 **Structure-activity relationships in the effects of phenacemide analogs on serum creatinine and anticonvulsant activity.** Archives Internationales de Pharmacodynamie et de Therapie. 244(1):107-112, 1980.

A series of aromatic and aliphatic analogs of phenacemide were tested in rabbits under standardized conditions. A number of chemicals/structural requirements for this effect could be recognized within the limited number of compounds available. None of them exceeded the potency of phenacemide. It is reported that there was no consistent correlation between the effect of serum creatinine and anticonvulsant potency in mice. 6 references. (Author abstract modified)

000250 Richelson, Elliott. Dept. of Psychiatry, Mayo Foundation, Rochester, MN 55901 **Psychotropic drugs and histamine**

H1-receptors of cultured mouse neuroblastoma cells. Psychopharmacology Bulletin. 16(1):38-40, 1980.

Receptor mediated synthesis of guanosine 3',5'-monophosphate by cultured mouse neuroblastoma cells was employed as assays for muscarinic acetylcholine and histamine H1-receptors. Tricyclic antidepressants were competitive inhibitors of the histamine H1-receptors (antihistamines); some of these drugs had a high affinity for this receptor. Comparison of the affinities of tricyclic antidepressants for histamine H1-receptors to those for muscarinic acetylcholine receptors indicated that most of the tricyclic antidepressants were more potent as antihistamines than as anticholinergics. It is recommended that clinicans be aware of the relative antihistamine potency of these drugs when prescribing them to patients. 12 references.

000251 Richter, Judith A.; Jackson, Susan K. Institute of Psychiatric Research, Indiana University School of Medicine, Indianapolis, IN 46223 **(3H)acetylcholine and (3H)5-hydroxytryptamine release from rat midbrain slices and the effects of calcium and phenobarbital.** Neurochemical Research. 5(7):719-730, 1980.

The potassium stimulated release of (3H)acetylcholine (ACh) from rat midbrain slices prelabeled by incubation with (3H)choline was found to be dependent on extracellular calcium. Phenobarbital inhibited the K stimulated (3H)ACh release and the IC50 was equal to that found for K stimulated endogenous ACh release. These results support the suggestion that barbiturates primarily inhibit the Ca dependent stimulated release of ACh and affect ACh synthesis only indirectly. K-stimulated release of (3H)5-hydroxytryptamine (5-HT) was also inhibited by removing Ca from the medium or by adding phenobarbital, results which further support the effects of barbiturates on depolarization-induced release process. Fluoxetine, an inhibitor of 5-HT uptake, increased the amount of (3H)5-HT found in the medium but did not fully block the uptake of (3H)5-HT in this slice preparation. 19 references. (Author abstract modified)

000252 Robertson, Harold A. Dept. of Pharmacology, Faculty of Medicine, Dalhousie University, Halifax, Nova Scotia, Canada B3H 4H7 **Audiogenic seizures: increased benzodiazepine receptor binding in a susceptible strain of mice.** European Journal of Pharmacology. 66(2/3):249-252, 1980.

The specific binding of 3H-flunitrazepam was higher in the brains of seizure susceptible DBA/2J mice than in brains of age matched, seizure resistant C57BL/6J mice. Benzodiazepine binding was higher in DBA/2J mice in the presence or absence of convulsions. The enhanced benzodiazepine binding in DBA/2J mice persisted in well washed brain membrane fragments, suggesting the elevation was not due to the presence of an endogenous ligand. The higher benzodiazepine binding in the DBA/2J mice reflected a greater density of benzodiazepine receptor sites, with no difference in affinity. It is suggested that a disorder of the GABA/benzodiazepine receptor complex may be involved in the seizure susceptibility of the DBA/2J strain. 8 references. (Author abstract modified)

000253 Rockman, G. E.; Amit, Z.; Bourque, C.; Brown, Z. W.; Ogren, S. O. Center for Research on Drug Dependence, Dept. of Psychology, Concordia University, Montreal, Quebec, Canada **Reduction of voluntary morphine consumption following treatment with zimelidine.** Archives Internationales de Pharmacodynamie et de Therapie. 244(1):123-129, 1980.

The possibility that serotonergic mechanisms may be involved in the mediation of the positive reinforcing effects of morphine was investigated. Male Wistar rats were presented with an everyday free choice between water and a morphine sucrose solution. Following a 5 day baseline period animals were injected with either zimelidine, a neuronal serotonin uptake inhibitor, or Ringer's solution for 5 consecutive days. Treatment with zimelidine was shown to significantly attenuate morphine drinking, suggesting that an increased availability of serotonin may interfere with the positive reinforcing properties of morphine. The results are also discussed in terms of a possible interaction with brain norepinephrine. The possibility that the reinforcing effects of both morphine and ethanol are subserved by common mechanisms is suggested. 33 references. (Author abstract modified)

000254 Romano, Carmelo; Goldstein, Avram. Dept. of Pharmacology, Stanford University School of Medicine, Stanford, CA 94305 **Stereospecific nicotine receptors on rat brain membranes.** Science. 210(4470):647-650, 1980.

An attempt was made to determine the receptor through which nicotine exerts its central actions. A high affinity, saturable, pharmacologically specific site for nicotine was detected in rat brain membranes. Competition studies with cholinergic agonists suggest that this site is a nicotinic cholinergic receptor. A technique for separating bound from free radioactive nicotine and a method of storage to protect against radiolytic breakdown are briefly considered. 20 references. (Author abstract modified)

000255 Rosenblatt, Jack E.; Shore, David; Neckers, Leonard M.; Perlow, Mark J.; Freed, William J.; Wyatt, Richard J. Laboratory of Clinical Psychopharmacology, NIMH, Saint Elizabeths Hospital, Washington, DC 20032 **Effects of chronic haloperidol on caudate 3H-spiroperidol binding in lesioned rats.** European Journal of Pharmacology. 60(4):387-388, 1979.

The effect of chronic haloperidol (2mg/kg/day i.p. for 14 days) on 3H-spiroperidol binding in the caudate of intact Sprague-Dawley rats was compared with that in rats given unilateral intrastriatal kainic acid injections to selectively destroy D1 dopamine receptors or unilateral cortical ablations to destroy corticostriate fibers containing D2 dopamine receptors. The chronic daloperidol treatment increased 3H-spiroperidol binding in the intact caudate, but had no effect in those lesioned with kainic acid. Binding was increased in caudates ipsilateral to cortical ablation. 5 references.

000256 Saffitz, Mark S.; Costello, Donald J.; Gilboe, David D. Gilboe: Dept. of Neurosurgery, University of Wisconsin School of Medicine, 187 Medical Science Bldg., Madison, WI 53706 **Nonlinear regression analysis of norepinephrine response kinetics in cerebral vasculature.** Journal of Pharmacology and Experimental Therapeutics. 211(1):13-19, 1979.

An indicator dilution method was used to study the kinetics of unidirectional norephinephrine (NE) uptake in the isolated canine brain. Results indicate that NE normally crosses the cerebral blood vessel wall by simple diffusion rather than by carrier mediated transport. The response to NE in the presence of phentolamine suggested competitive inhibition. Phenoxybenzamine inhibited the alpha-adrenergic response to NE noncompetitive, but also blocked tissue and neuronal uptake of NE. (Author abstract modified)

000257 Sahakian, B. J.; Carlson, Kristin R.; DeGirolami, Umberto; Bhawan, Jag. Dunn Clinical Nutrition Centre, Addenbrooke's Hospital, Trumpington Street, Cambridge CB2 1QE, England **Functional and structural consequences of long-term dietary L-dopa treatment in mice.** Communications in Psychopharmacology. 4(2):169-176, 1980.

Mice of two strains (C-57 and BALB-C) consumed L-dopa in their diets at calculated doses of 0, 6250, and 10000mg/kg/day for over 9 months. L-dopa treated mice of both strains weighed significantly less than the control mice at the end of the treatment period. Spontaneous activity was significantly elevated due to L-dopa treatment in the C-57 strain but not in the

BALB-C strain. Dopamine receptor numbers in the caudate/nucleus accumbens were higher in the BALB-C than in the C-57 strain, but there was no effect of L-dopa in either strain. A light microscopic examination of step serial sections through the brains revealed no abnormalities in any groups. It is concluded that this high dose, long-term L-dopa treatment can alter spontaneous locomotor behavior in the absence of detectable morphological or neurochemcial alterations in dopaminergic areas. 31 references. (Author abstract)

000258 Samanin, R.; Cervo, L.; Rochat, C.; Poggesi, E.; Mennini, T. Istituto di Richerche Farmacologiche Mario Negri, Via Eritrea, 62, I-20157 Milan, Italy **Reduction in the number of serotonin receptors in the brainstem of morphine dependent rats: relation to blockade of naloxone precipitated jumping by serotonin agonists.** Life Sciences. 27(13):1141-1146, 1980.

The effect of various drugs on the naloxone precipitated withdrawal syndrome of morphine dependent rats was investigated. Quipazine and metachlorophenylpiperazine, two agents mimicking serotonin at CNS receptors, markedly lowered the frequency of jumping in abstinent rats; m-chlorophenylpiperazine significantly blocked diarrhea as well. Ptosis and diarrhea but not jumping were significantly reduced by clonidine. None of the withdrawal signs considered was significantly affected by propranolol or haloperidol. A significant reduction in the number of 3H-serotonin binding sites was found in the brainstem of morphine dependent rats, but no change was observed in the number of serotonin receptors in the cortex. The hypothesis is proposed that in morphine dependent rats, a central serotoninergic hypofunction, probably related to a decrease in the number of serotonin receptors in the brainstem, occurs as a consequence of persistent activation of central serotonin function by long-term treatment with morphine. This mechanism appears to play a major role in the compulsive jumping shown by morphine dependent rats after naloxone injection. Alpha 2 adrenergic sites may play a role in other withdrawal signs examined in this study. 37 references. (Author abstract modified)

000259 Saria, Alois; Mayer, Norbert; Lembeck, Fred; Pabst, Maria. Lembeck: Institut fur Experimentelle und Klinische Pharmakologie, Universitatsplatz 4, A-8010 Graz, Austria **Regional distribution and biochemical properties of 125I-Tyr8-substance P binding sites in synaptic vesicles.** Naunyn-Schmiedeberg's Archives of Pharmacology. 311(2):151-157, 1980.

The binding of 125I-Tyr8-substance-P (SP) to synaptic vesicles showed an uneven distribution within the brain and spinal cord of Sprague-Dawley rats. The regional distribution had a positive correlation with SP content except in the hypothalamus. Calcium and magnesium ions decreased the number of binding sites without altering affinity; when these agents were cholated, SP binding was enhanced. Sodium and potassium ions did not significantly inhibit SP binding. Pretreatment of synaptic vesicles with phospholipase A2, C, and D led to a total loss of SP binding, but N-ethylmaleimide and monoiodoacetic acid had no effect. 50 references. (Author abstract modified)

000260 Sasa, Masashi; Fujimoto, Sakae; Igarashi, Seishi; Munekiyo, Katsunori; Takaori, Shuji. Dept. of Pharmacology, Kyoto University, Sakyo-ku Kyoto 606, Japan **Microiontophoretic studies on noradrenergic inhibition from locus coeruleus of spinal trigeminal nucleus neurons.** Journal of Pharmacology and Experimental Therapeutics. 210(3):311-315, 1979.

Microiontophoretic techniques were used to study the influence of norepinephrine (NE) in the locus coeruleus (LC) on spinal trigeminal nucleus (STN) neurons in cats. Results indicate that NE released from terminals of LC neurons inhibits the transmission of STN relay neurons. NE appears to act on primary afferent terminals to produce presynaptic inhibition. 27 references. (AUthor abstract modified)

000261 Savolainen, H.; Iivanainen, M.; Elovaara, E.; Tammisto, P. Iivanainen: NINCDS, NIH, Bldg. 36, Room 5D-06, Bethesda, MD 20205 **Distribution of 14C-phenytoin in rat Purkinje cells, cerebellar and cerebral neuronal tissue after a single intraperitoneal injection.** European Neurology. 19(2):115-120, 1980.

The distribution of 14C-phenytonin in rat Purkinje cells, cerebellar and cerebral neuronal tissue after a single intraperitoneal injection was investigated in 10 adult female littermates. A perikaryon enriched Purkinje cell fraction was isolated from the cerebellar specimens. Drug uptake in this fraction was about four times that in other cerebellar neurons and more than twice that in the cerebral neurons. It is noted that the techniques used to isolate Purkinje cell perikarya involve a compromise between reasonable purity and yield. It appears that a positive correlation between the uptake of the drug and its toxic action at the cellular level may exist. 21 references. (Author abstract modified)

000262 Schaub, C.; Bluet-Pajot, M. T.; Mounier, F.; Segalen, A.; Duhault, J. Unite de Recherche de Neuroendocrinologie INSERM U. 159, 2ter, rue d'Alesia, F-75014 Paris, France **Effects of noradrenergic agonists and antagonists on growth hormone secretion under gamma-hydroxybutyrate narco-analgesia in the rat.** Psychoneuroendocrinology. 5(2):139-146, 1980.

The effects of noradrenergic agonists and antagonists on growth hormone secretion under gamma-hydroxybutyrate (GHB) narcoanalgesia in the rat were investigated. The administration of GHB has no effect on the hypothalamic concentration of norepinephrine (NE), dopamine (DA), and serotonin (5-HT) in the rat. The injection of GHB induces a consistent growth hormone (immunoreactive GH) secretory episode, followed by basal levels for several hours. During this period, the infusion of clonidine, an alpha-adrenergic agonist, elicited a dramatic GH increment, whereas basal levels are not modified by isoproterenol, a beta-adrenergic agonist. In animals pretreated with alpha and beta-adrenergic agonists, clonidine enhances the GH peak induced by GBH, which is clearly inhibited by isoproterenol. The effects of alpha-adrenergic and beta-adrenergic antagonists were also investigated. Results support the hypothesis that alpha-adrenergic receptors mediate the secretion of the GH-releasing hormone and that beta-adrenergfic receptors are involved in the release of somatostatin. 24 references. (Author abstract modified)

000263 Schlen, H.; Bentley, G. A. Bentley: Dept. of Pharmacology, Monash University, Clayton, Victoria 3168, Australia **The possibility that a component of morphine-induced analgesia is contributed indirectly via the release of endogenous opioids.** Pain. 9(1):73-84, 1980.

The abdominal constriction test was used to explore the effects of cold stress (4 degrees C) of varying duration on the antinociceptive effects of morphine in mice. After 15 min exposure to cold, significant endogenous analgesia was observed, together with a significant potentiation of the antinociceptive effects of morphine. This effect was no longer seen after more prolonged exposure to 4 degrees C, and the antinociceptive effects of morphine diminished progressively and was significantly less than control values after 2 hr or longer exposure. In the absence of cold stress, pretreatment with corticosterone, dexamethasone, or ACTH reduced the potency of morphine in a manner similar to that seen after 4 hr cold stress. Potency of morphine in adrenalectomized mice was not affected by 3 hr cold stress. It is concluded that adrenal corticoids released in response to the stressor effect of cold exposure are responsible for the antagonism of

the antinociceptive action of morphine seen in mice after extended exposure to cold. It is suggested that the initial potentiation of antinociceptive potency of morphine is due to release of endogenous opioids; with more prolonged stress, stores of these substances may become progressively depleted, possibly as a result of raised corticosteroid levels, so that their contribution to analgesia is steadily reduced and ultimately abolished. 19 references. (Author abstract modified)

000264 Schoemaker, Hans; Nickolson, Victor J. Dept. of CNS Pharmacology, Scientific Development Group, Organon Kloosterstraat 1, Oss, The Netherlands **Effects of des-Tyr-gamma-endorphin on dopamine release from various rat brain regions in vitro.** Life Sciences. 27(15):1371-1376, 1980.

The effects of des-Tyr-gamma-endorphin (DTGE) on dopamine release from varous rat brain regions in vitro were studied. In rat striatum, nucleus accumbens, and frontal cortex slices, the potential neuroleptic peptide DTGE depressed K evoked release without affecting basal dopamine release. Haloperidol increased both basal and K-induced release in striatal and nucleus accumbens slices whereas it increased only basal dopamine release in frontal cortex slices. At lower doses, haloperidol had no effect. It is concluded the DTGE may decrease dopaminergic activity in the brain by depressing depolarization-induced dopamine release, possibly via a presynaptic mechanism. 15 references. (Author abstract modified)

000265 Schoeneberger, Arno S.; Verrier, Richard L.; Lown, Bernard. Cardiovascular Research Laboratories, Dept. of Nutrition, Harvard School of Public Health, Boston, MA 02115 **Protective effect of prenylamine against vulnerability to ventricular fibrillation in the normal and ischemic canine myocardium.** Proceedings of the Society for Experimental Biology and Medicine. 161(1):56-59, 1979.

The antiarrhythmic action of prenylamine in normal and ischemic canine myocardium was investigated. The reduction in threshold for ventricular fibrillation induced by obstruction and reestablishment of coronary artery flow was partially reversed by infusion of prenylamine, a drug with slow channel blocking and coronary artery vasodilating properties. Mean blood pressure and heartrate were unaltered. Prenylamine administration also elevated the ventricular fibrillation threshold in the nonischemic myocardium. Its effect on reperfusion ventricular fibrillation threshold is unique, since commonly used antiarrhythmic drugs exert no such effect. 20 references. (Author abstract modified)

000266 Schuhmacher, P.; Walland, A. Walland: Abt. fur Pharmakologie, C. H. Boehringer Sohn, D-6507 Ingelheim, West Germany **Central blood pressure effects of guanylyl-imido-diphosphate and cyclic guanosine-monophosphate.** Naunyn-Schmiedeberg's Archives of Pharmacology. 312(1):31-35, 1980.

Guanylyl-imido-diphosphate induced increases in blood pressure and heartrate in anesthetized cats when injected into the lateral cerebral ventricle, but not when given intravenously. Cyclic GMP caused hypotension and bradycardia when injected intracerebroventricularly, but had no effect when given intravenously. Results support the yin yang hypothesis, which postulates an antagonism between intracellular cyclic GMP and cyclic AMP. 40 references. (Author abstract modified)

000267 Scuvee-Moreau, J.; Quinaux, N.; Dresse, A. Institut de Pathologie, Laboratoire de Pharmacologie, Universite de Liege B-4000 Sart-Tilman par Liege 1, Belgium **Relation between the effects of antidepressant drugs on the uptake of monoamines and on the spontaneous activity of central neurons.** Archives Internationales de Pharmacodynamie et de Therapie. 242(2):318-320, 1979.

The relation between the effects of antidepressant drugs on the uptake of monoamines and on the spontaneous activity of central neurons was investigated. Electrophysiological studies have demonstrated that these drugs decrease the frequency of discharge of the noradrenergic neurons of the locus coeruleus (LC) and of the serotonergic neurons of the dorsal raphe (DR). A complementary study was initiated to investigate the inhibition of the reuptake of noradrenaline (NA) and of serotonin (5-HT) corresponding to the perfusion of these tricyclic antidepressants at the doses which reduce to 50% the frequency of discharge of LC and DR neurons. The inhibition of the uptake of 14C-NA and 3H-5-HT was measured simultaneously on cerebral cortex slices. Perfusion of desipramine, imipramine, or chlorimipramine caused a more pronounced inhibition of the reuptake of NA than of the reuptake of 5-HT. 6 references.

000268 Seeman, Phillip; Westman, Karen; Coscina, Donald; Warsh, J. J. Dept. of Pharmacology, Medical Sciences Bldg., University of Toronto, Tornoto, Canada M5S 1A8 **Serotonin receptors in hippocampus and frontal cortex.** European Journal of Pharmacology. 66(2/3):179-191, 1980.

Various serotonin (5-HT) agonists and antagonists showed similar median inhibitory concentrations against the binding of tritiated 5-HT and d-lysergic acid diethylamide (d-LSD) in homogenates of calf hippocampus, suggesting the two tritiated ligands label the same sites in this region. In calf frontal cortex, 3H-d-LSD appeared to bind to more than one serotonergic site, and 3H-spiperone appeared to bind to a separate serotonergic site. Scatchard analyses of the binding of the all three tritiated ligands indicated that the density of 3H-d-LSD sites in the calf frontal cortex was about equal to the sum of the densities for 3H-5-HT and 3H-siperone sites. Both 3H-LSD and 3H-5-HT showed enhanced binding in the hippocampus of male Wistar rats 2 weeks after lesions of the midbrain dorsal and median raphe nuclei, suggesting that supersensitivity develops in 5-HT receptors after afferent denervation. 33 references. (Author abstract modified)

000269 Sethy, Vimala H. Upjohn Company, CNS Research, Kalamazoo, MI 49001 **Regulation of striatal acetylcholine concentration by D2-dopamine receptors.** European Journal of Pharmacology. 60(4):397-398, 1979.

The effects of dopamine D2 receptor agonists and antagonists on striatal acetylcholine (ACh) concentration were examined in male Sprague-Dawley rats. The D2 receptor agonists bromocriptine and lergotrile significantly increased ACh concentrations in the striatum. The D2 receptor antagonists metoclopramide and molindone significantly decreased striatal ACh concentration. 5 references.

000270 Sharkawi, Mahmoud. Dept. de Pharmacologie, Faculte de Medecine, Universite de Montreal, Montreal, Quebec, Canada **Inhibition of alcohol dehydrogenase by disulfiram; possible relation to the disulfiram-ethanol reaction.** Life Sciences. 27(21):1939-1945, 1980.

The influence of disulfiram on liver alcohol dehydrogenase (LADH) was investigated in mice and rats. Disulfiram inhibited LADH noncompetitively. Ethanol elimination was significantly reduced in mice pretreated with disulfiram. At identical time intervals after ethanol administration, the concentration of ethanol in blood from disulfiram, cyanamide, or dimethyl formamide treated mice were significantly higher than the ethanol concentration in blood from control mice. Both cyanamide and dimethyl formamide can precipitate a disulfiram-like reaction in man when ethanol is ingested. These results suggest that elevated concentrations of ethanol should be considered in the etiol-

ogy of some of the symptoms seen in the disulfiram/ethanol reaction. 20 references. (Author abstract modified)

000271 Shimizu, Tatsuo. Dept. of Neuropsychiatry, Osaka Medical College, Takatsuki, Osaka, Japan **Pathophysiological studies on schizophrenia with special reference to homovanillic acid concentration in cerebrospinal fluid.** Bulletin of the Osaka Medical School. 25(1):51-68, 1979.

Seventy-three schizophrenics who were grouped into several subtypes were examined biochemically to determine homovanillic acid (HVA) concentrations in the cerebrospinal fluid. After haloperidol administration the HVA level showed different patterns of variance which distinguished between the individual subgroups of schizophrenics. The hebephrenic subgroup revealed practically no changes in HVA level, while the atypical psychosis subgroup showed a large increase in the initial period of treatment. Of 24 atypical psychotics, as many as 23 responded well to haloperidol treatment. The therapeutic effect of antipsychotic drugs was very closely correlated with the influence upon HVA level. 62 references. (Author abstract modified)

000272 Simonnet, G.; Bioulac, B.; Rodriguez, F.; Vincent, J. D. INSERM, U.176, Domaine de Carreire, Rue Camille Saint-Saens, F-33077 Bordeaux Cedex, France **Evidence of a direct action of angiotensin II on neurones in the septum and in the medial preoptic area.** Pharmacology Biochemistry and Behavior. 13(3):359-363, 1980.

Evidence of a direct action of angiotensin II (AII) on neurons in the septum and the medial preoptic area is presented. All septal neurons sensitive to AII (15/37) responded to microiontophoretic application of AII by an inhibition to the peptide. Of 44 units tested in the medial preoptic area, 21 cells (58%) were sensitive to AII and responded either by an increase (11/21) or decrease (10/21) in their firing. The specificity of these responses was ascertained by simultaneous application of the antagonist Sar1-Ile8-Angiotensin II. These data suggest that AII acts directly on neurons of the septum and medial preoptic area, two structures implicated in the control of drinking behavior. 28 references. (Author abstract modified)

000273 Skett, Paul; Mode, Agneta; Rafter, Joseph; Sahlin, Lena; Gustafsson, Jan-Ake. Dept. of Pharmacology, The University, Glasgow G12 8QQ Scotland **The effects of gonadectomy and hypophysectomy on the metabolism of imipramine and lidocaine by the liver of male and female rats.** Biochemical Pharmacology. 29(20):2759-2762, 1980.

Sex differences in the hepatic metabolism of imipramine and lidocaine were studied in relation to the effect of gonadectomy and hypophysectomy on these differences. It was found that gonadectomy in male animals led to a more feminine pattern of metabolism. Hypophysectomy mimicked this effect except in the case of lidocaine N-deethylation which was unaffected by hypophysectomy. Castration/hypophysectomy gave a similar result to hypophysectomy alone. These data indicate a gonadal control of metabolism in the male, except for lidocaine N-deethylase, which is under more complex control via the pituitary gland. In the female, ovariectomy was without effect while hypophysectomy caused a masculinization of hepatic metabolism, indicating a dominant role of the pituitary in the control of drug metabolism in the female. This agrees well with reports of hepatic steroid metabolism and lends further support to the hypothesis of a pituitary feminizing factor secreted by the female. 34 references. (Author abstract modified)

000274 Sklenovsky, A.; Chmela, Z.; Rypka, M. Dr. S. Allende St. 3, 775 15 Olomouc, Czechoslovakia **The mechanism of effect of neuropharmacological drugs VI.: effect of noradrenaline and 5-hydroxytryptamine on brain free fatty acids.** Activitas Nervosa Superior. 21(3):169-170, 1979.

The effects of noradrenaline (NE) and 5-hydroxytryptamine (5-HTP) on brain nonesterified free fatty acids (NEFA) were investigated in rats. Enhancement of NE concentrations in brain was elicited by administration of DOPA for 2 days. Increases in 5-HTP concentrations were provided by tryptophane administration for 3 days. The enhancement of NE led to increased total NEFA in whole brain tissue, while enhancement of 5-HTP led to decrease of total NEFA. Results are in agreement with the fact that small doses of 5-HTP act in a depressant manner on synaptical transfer in cortex, and reflect the fact that higher concentrations of NE provoke CNS stimulation. 11 references.

000275 Skolnick, Phil; Paul, Steven M.; Barker, Jeffery L. Laboratory of Bioorganic Chemistry, NIAMDD, Bethesda, MD 20205 **Pentobarbital potentiates GABA-enhanced (3H)-diazepam binding to benzodiazepine receptors.** European Journal of Pharmacology. 65(1):125-127, 1980.

The effect of pentobarbital on the GABA mediated increase in benzodiazepine receptor affinity was investigated. Subanesthetic concentrations of pentobarbital were found to significantly potentiate GABA mediated enhancement of benzodiazepine binding. The effect of both GABA and pentobarbital on diazepam binding was greater than the sum of the enhancement observed with either compound alone, indicating a synergism between the two. The explicit parallelism between these results and electrophysiological assays suggests that activation of Cl-conductance mechanisms by GABA and pentobarbital may be important determinants of benzodiazepine receptor affinity, and that these changes in benzodiazepine receptor affinity may reflect a biochemical event common to the actions of a number of clinically important anticonvulsant sedative agents. 5 references.

000276 Skolnick, Phil; Paul, Steven M.; Marangos, Paul J. Lab. of Bioorganic Chemistry, NIAMDD, NIH, Bethesda, MD 20205 **Purines as endogenous ligands of the benzodiazepine receptor.** Federation Proceedings. 39(12):3050-3055, 1980.

Endogenous inhibitors of (3H)benzodiazepine binding have been isolated from the mammalian CNS and identified as the purines inosine and hypoxanthine. The affinities of these compounds for the benzodiazepine receptor are many orders of magnitude lower than those reported for clinically effective benzodiazepines. However, the enhanced formation of these compounds, which occurs during electrical or chemical depolarization of brain tissue, coupled with the small number of receptors that must be occupied to manifest the pharmacologic effects of benzodiazepines in vivo are consistent with a purinergic modulation of the benzodiazepine receptor. The pharmacologic, electrophysiologic, and neurochemical observations reviewed further support either a neurotransmitter or neuromodulatory role of purines in the function of the benzodiazepine receptor. 26 references. (Author abstract modified)

000277 Skolnick, Phil; Paul, Steven; Zatz, Martin; Eskay, Robert. Laboratory of Bioorganic Chemistry, NIAMDD, NIH, Bethesda, MD 20205 **the inner plexiform layer of rat retina.** European Journal of Pharmacology. 66(1):133-136, 1980.

Neonatal treatment of male Zivic-Miller rats with monosodium glutamate caused an 88% reduction in (3H)diazepam binding to retinal homogenates. Intraocular administration of kainic acid to neonatal rats caused a 91% reduction in (3H)diazepam binding, which could be attributed to a decreased number of receptors rather than to altered affinity. The binding of (3H)diazepam to retinal homogenates was not altered in pink eyed, tan hooded rats with genetic retinopathy (degeneration of photoreceptor cells) compared to Osborne-Mendel control rats.

These results suggest that brain type benzodiazepine receptors are highly localized on neuronal elements of the inner plexiform layer or on ganglion cells. 10 references. (Author abstract modified)

000278 Slotkin, Theodore A.; Burwell, Belinda; Lau, Christopher. Dept. of Pharmacology, Duke University Medical Center, Durham, NC 27710 **An intracellular opiate receptor.** Life Sciences. 27(21):1975-1978, 1980.

The hypothesis that opiate peptides play a physiological role within the adrenal medulla through action on intracellular opiate receptors was evaluated by determining the effects of opiates (methadone and dextrorphan) and an opiate antagonist (naloxone) on the chromaffin granules. Since the primary known role of the graules is to store catecholamines, the ability of the isolated organelles to maintain their amine stores at zero degrees was the parameter assessed. Addition of methadone or dextrorphan to the granule suspension produced a concentration dependent loss of granular catecholamines, indicating destabilization of storage within the granule. Although naloxone itself did not affect catecholamine content, it was able to antagonize the effect of methadone, supporting the view that the opiates mobilized the amine stores through actions at a granular opiate receptor. 17 references. (Author abstract modified)

000279 Smit, Mark H.; Ehlert, Frederick J.; Yamamura, Susan; Roeske, William R.; Yamamura, Henry I. Yamamura, H.: Dept. of Pharmacology, University of Arizona, Health Sciences Center, Tucson, AZ 85724 **Differential regulation of muscarinic agonist binding sites following chronic cholinesterase inhibition.** European Journal of Pharmacology. 66(4):379-380, 1980.

The binding of tritiated quinuclidinyl benzilate (3H-QNB) and cis-methyldioxolane (3H-CD) to crude homogenates of the cerebral cortex of male Sprague-Dawley rats was examined after chronic in vivo treatment with paraoxon, an organophosphorus cholinesterase inhibitor. Treatment with paraoxon for 14 days caused a 44% decrease in the total density of muscarinic sites as measured by 3H-QNB binding. A differential regulation of various agonist binding sites was observed; 3H-CD binding revealed a nonsignificant (15%) increase in the density of superhigh affinity sites and a significant decrease (38%) in the density of high affinity sites. Low affinity sites were decreased by 57% in paraoxon treated rats. 5 references.

000280 Smith, Jerry R.; Waters, Irving, W.; Masten, Lawrence W. Waters: Dept. of Pharmacology, School of Pharmacy, University of Mississippi, University, MS 38677 **Effect of the catecholamine-depleting agent 1-phenyl-3-(2-thiazolyl)-2-thiourea (U-14,624) on drug metabolism in the rat.** Biochemical Pharmacology. 29(18):2425-2430, 1980.

The effects of the catecholamine depleting agent 1-phenyl-3-(2-thiazolyl)-2-thiourea (U-14,624) on drug metabolism in the rat were studied. Male rats injected with U-14,624 for 3 days prior to induction of anesthesia with pentobarbital slept significantly longer than control animals. Plasma and brain half-lives of pentobarbital were also prolonged in the treated animals, but both control and treated groups awakened with similar brain levels of pentobarbital. In addition, the plasma half-life of antipyrine in treated animals was also prolonged significantly. Subacute administration of U-14,624 to male rats for 5 to 7 days suppressed the activities of aminopyrine N-demethylase, aniline hydroxylase and p-nitroanisole O-demethylase enzymes in vitro. It is concluded that inhibition of oxidative drug metabolism by U-14,624 is mechanistically related to depletion of cytochrome P-450, but inhibition of these enzymes in vitro indicates that a second inhibitory mechanism may also be operative. 50 references. (Author abstract modified)

000281 Sonawane, B. R.; Yaffe, S. J.; Shapiro, B. H. Dept. of Pediatrics, University of Pennsylvania, School of Medicine, Philadelphia, PA 19104 **Changes in mouse brain diazepam receptor binding after phenobarbital administration.** Life Sciences. 27(14):1335-1338, 1980.

Specific 3H-diazepam binding was measured in vitro in adult mouse brain after 4 days of an inductive dose of phenobarbital pretreatment. Sexual dimorphism was observed in 3H-diazepam brain binding; female mice had significantly higher benzodiazepine binding than males without any difference in apparent affinity constants. Phenobarbital pretreatment caused a significant decrease in the maximal number of binding sites as well as in dissociation rate constants in both sexes. 28 references. (Author abstract modified)

000282 Spadaro, C.; Scoto, G. M.; Ferri, P.; Ferri, S. S. Ferri: Institute of Pharmacology and Pharmacognosy, University of Catania, A. Doria, Catania I-95125, Italy **Changes in opiate activity of rat pituitary following acute administration of neuroleptics.** Psychopharmacology. 69(1):59-62, 1980.

Pituitary extracts from male Sprague-Dawley rats injected with trifluoperazine or sulpiride showed increased opiate activity. This increase was particularly evident 2 hours after administration of sulpiride. Dexamethasone completely prevented the neuroleptic-induced effect. It is suggested that trifluoperazine and sulpiride may alter dopaminergic mechanisms regulating endorphin storage in the pituitary. 15 references. (Author abstract modified)

000283 Spyraki, Christina; Fibiger, H. C. Division of Neurological Sciences, Dept. of Psychiatry, University of British Columbia, Vancouver, B.C. V6T 1W5 Canada **Functional evidence for subsensitivity of noradrenergic alpha2 receptors after chronic desipramine treatment.** Life Sciences. 27(20):1863-1867, 1980.

The effects of acute (2 day) and chronic (15 day) administration of desipramine (DMI) on clonidine-induced suppression of exploratory behavior was investigated in the rat. In accordance with previous results, low doses of clonidine produced a dose dependent decrease in the chronic DMI groups. Acute treatment with DMI was without effect. Results provide behavioral support for recent biochemical and neurophysiological data which suggest that chronic DMI administration results in subsensitivity of presynaptic receptors on central noradrenergic neurons. 33 references. (Author abstract modified)

000284 Starratt, Christopher; Meunier, Gary F.; Mulvaney, Dallas E. Meunier: Dept. of Psychological Science, Ball St... University, Muncie, IN 47306 **Effects of diphenylhydantoin on spontaneous motor activity.** Perceptual and Motor Skills. 51(1):29-30, 1980.

The effects of moderate, acute doses of diphenylhydantoin on the spontaneous motor activity of 30 rats were examined. A dose of 30mg/kg of the anticonvulsant drug produced an immediate, although shortlived (about 40 minutes), suppression of this behavior for albino rats. There was also a rebound effect in which the activity level of treated animals exceeded that of controls from 40 minutes to one hour after treatment. It is concluded that moderately sized doses, considerably below those utilized in previous investigations, will depress motor activity. 7 references. (Author abstract modified)

000285 Stefanini, E.; Marchisio, A. M.; Devoto, P.; Vernaleone, F.; Collu, R.; Spano, P. F. Spano: Institute of Pharmacology and Pharmacognosy, University of Cagliari, Cagliari, Italy **Sodium-dependent interaction of benzamides with dopamine receptors.** Brain Research. 198(1):229-233, 1980.

Sulpiride and other benzamide displacing activity on (3H)spiroperidol binding by rat striatal dopaminergic receptors was found to be uniquely sodium dependent, while classical neuroleptic activity was not influenced by NaCl. It is noted that benzamides are a new class of compounds which possess antiemetic as well as antipsychotic properties. The hypothesis that benzamides exert their central effects through receptors different from those identified by classical neuroleptics was investigated. Results suggest the existence of at least two populations of striatal dopaminergic receptors, sodium dependent and sodium independent, through which benzamides and neuroleptics interact, respectively. 12 references. (Author abstract modified)

000286 Steger, R. W.; Silverman, A. Y.; Siler-Khodr, T. M.; Asch, R. H. Dept. of Obstetrics and Gynecology, University of Texas Health Science Center at San Antonio, San Antonio, TX 78284 **The effect of delta9-tetrahydrocannabinol on the positive and negative feedback control of luteinizing hormone release.** Life Sciences. 27(20):1911-1916, 1980.

The principal psychoactive component of marihuana, delta9-tetrahydrocannabinol (THC), was found to decrease serum luteinizing hormone (LH) levels when given to ovariectomized rats at a dose of 10mg/kg. This same dose of THC blocked both the estrogen and progesterone mediated positive feedback release of LH. The steroid-induced LH surge, when blocked by THC, reappears 24 h later. The positive feedback release of LH should serve as a suitable model to study the mechanisms of action by which THC blocks the ovulatory LH surge. 21 references. (Author abstract modified)

000287 Steranka, Larry R.; Sanders-Bush, Elaine. Dept. of Pharmacology, Indiana University, North West Center for Medical Education, 3400 Broadway, Gary, IN 46408 **Long-term effects of continuous exposure to amphetamine on brain dopamine concentration and synaptosomal uptake in mice.** European Journal of Pharmacology. 65(4):439-443, 1980.

Brain levels of 5-hydroxytryptamine (5-HT), dopamine (DA), and norepinephrine (NE) were measured in mice 2 weeks after continuous infusions of p-chloroamphetamine (PCA) or amphetamine from subcutaneously implanted minipumps. Continuous infusion of PCA for 3 days decreased whole brain 5-HT without altering NE or DA. Continuous infusion of amphetamine for 6 days decreased whole brain DA without altering 5-HT or NE. The high affinity uptake of 3H-DA was markedly and selectively reduced in striatal synaptosomes from animals infused with amphetamine for 6 days. Results indicate that neurotoxic effects can be induced by amphetamine itself, as well as by its halogenated derivatives. 11 references. (Author abstract modified)

000288 Stone, W. E.; Javid, M. J. Dept. of Physiology, University of Wisconsin, Medical School, Madison, WI 53706 **Effects of anticonvulsants and glutamate antagonists on the convulsive action of kainic acid.** Archives Internationales de Pharmacodynamie et de Therapie. 243(1):56-65, 1980.

To further characterize the convulsive activity of kainic acid (KA), six anticonvulsive agents were tested for their capacity to antagonize the seizures, two glutamate antagonists were similarly tested, and KA was tested in subconvulsive doses for its capacity to potentiate seizures induced by pentylenetetrazol (PTZ) or 3-mercaptopropionic acid (3-MP). That KA may have an action on the gamma-aminobutyrate system was suggested by the following: it was strongly anatagonized by aminooxyacetic acid; ethosuximide was ineffective against KA as against 3-MP; and a subconvulsive dose of KA potentiated 3-MP but not PTZ. However, KA was antagonized by trimethadione, phenobarbital, and chloridazepoxide more effectively than was 3-MP. The convulsive action of KA was potentiated by the glutamate antagonists lambda-glutamate diethyl ester (GDEE) and lambda-nuciferine. The failure of these agents to antagonize KA-induced seizures is consistent with the view that KA and glutamate act on a separate excitatory receptor sites. It is suggested that the potentiation might possibly be due to a blocking of glutamergic activation of neurons that are inhibitory. 32 references. (Author abstract modified)

000289 Stoof, J. C.; Thieme, R. E.; Vrijmoed-de Vries, M. C.; Mulder, A. H. Dept. of Neurology, Free University, Medical Faculty, Van der Boechorststraat 7, 1081 BT Amsterdam, The Netherlands **In vitro acetylcholine release from rat caudate nucleus as a new model for testing drugs with dopamine-receptor activity.** Naunyn-Schmiedeberg's Archives of Pharmacology. 309(2):119-124, 1979.

The effects of dopamine receptor agonists on the depolarization-induced release of tritiated acetylcholine from slices of male Wistar rat caudate nucleus were examined with a superfusion method. Apomorphine and N,N-dipropyl-2-amino-5,6-dihydroxytetraline inhibited acetylcholine release induced by 26mM potassium, and these inhibitory effects were antagonized by haloperidol. Dopamine and bromocriptine had weaker inhibitory effects on acetylcholine release. Pretreatment of young rats with 6-hydroxydopamine (6-0HDA) and desipramine increased the inhibitory effects of dopamine receptor agonists on acetylcholine release, suggesting dopamine receptor supersensitivity. Apomorphine-induced stereotypy was also significantly enhanced in rats lesioned with 6-0HDA. 24 references. (Author abstract modified)

000290 Stracher, A.; McGowan, E. B.; Hedrych, A.; Shafiq, S. A. Dept. of Biochemistry SUNY, Downstate Medical Center, Brooklyn, NY 11203 **In vivo effect of protease inhibitors in denervation atrophy.** Experimental Neurology. 66(3):611-618, 1979.

The effects of the protease inhibitors leupeptin and pepstatin on denervation-induced atrophy in chicken pectoralis msucle were examined in vivo. Comparison of muscle weights, fiber diameters, and light meromyosin paracrystals in treated and untreated animals indicated the inhibitors significantly delayed denervation atrophy. Results suggest that protease inhibitors may have therapeutic potential in a variety of neuromuscular degenerative disorders. 15 references. (Author abstract modified)

000291 Strombom, Ulf; Forn, Javier; Dolphin, Annette C.; Greengard, Paul. Dept. of Pharmacology, University of Goteborg, Goteborg, Sweden **Regulation of the state of phosphorylation of specific neuronal proteins in mouse brain by in vivo administration of anesthetic and convulsant agents.** Proceedings of the National Academy of Sciences of the United States. 76(9):4687-4690, 1979.

The effect of drug treatment in vivo on the state of phosphorylation of two specific neuronal proteins (Ia and Ib), was studied in mouse brain. Animals were killed by immersion into liquid nitrogen, and proteins Ia and Ib were extracted by a procedure designed to prevent alterations in their state of phosphorylation. Several anesthetic agents (pentobarbital, chloral hydrate, and urethane) each caused a decrease in the state of phosphorylation of these proteins. Conversely, the convulsant agents pentylenetetrazol and picrotoxin each caused an increase in the state of phosphorylation of these proteins. Neither the anesthetic nor the convulsant agents affected the total amount of these proteins. Results are compatible with a role for proteins Ia and Ib in neuronal function. 18 references. (Author abstract modified)

000292 Strother, Allen; Chau, Lucille S. K. Loma Linda University School of Medicine, Dept. of Pharmacology and Physiology, Loma Linda, CA 92354 **Influence of glucose (in vivo or in vitro) on duration of narcotic analgesics and on the kinetics of drug metabolism.** Pharmacology. 21(3):161-166, 1980.

Glucose prolonged the duration of analgesia induced by methadone, morphine, and codeine in male Swiss-Webster mice. This prolongation was associated with a decrease in in vitro metabolism of the narcotics. Chlorpromazine metabolism was not significantly inhibited by glucose. Michaelis-Menten kinetics showed a mixed type of competitive and noncompetitive inhibition of methadone metabolism upon oral administration of glucose or in vitro addition of glucose to an enzyme system prepared from mouse liver. 14 references. (Author abstract modified)

000293 Sugrue, Michael F. Centre de Recherche Merrell International, 16, rue d'Ankara, F-67084-Strasbourg-Cedex, France **The inability of chronic fluoxetine to potentiate a serotonin mediated effect.** Communications in Psychopharmacology. 4(2):131-134, 1980.

The effects of acute and chronic fluoxetine, a specific inhibitor of serotonin (5-HT) reuptake in the rat were compared. Acutely administered fluoxetine potentiated the haloperidol-induced increase in rat striatal content of 3,4-dihydroxyphenylacetic acid and homovanillic acid. In contrast, the haloperidol-induced elevations were unaltered by chronic fluoxetine. The results reveal that adaptive changes occur in rat central serotoninergic systems following the prolonged inhibition of 5-HT reuptake. 15 references. (Author abstract)

000294 Sundermann, Richard H.; Wooten, G. Frederick. Wooten: Dept. of Neurology, Box 8111, Washington University School of Medicine, 660 South Euclid, St. Louis, MO 63110 **Biochemical properties of spiperone binding to rat brain membranes.** Pharmacology. 21(4):295-305, 1980.

The biochemical properties of 3H-spiperone binding were studied in a crude membrane homogenate of male Sprague-Dawley rat corpus striatum. Scatchard analysis revealed a single high affinity site with a dissociation constant of 0.14nM and a maximum binding capacity of 26fmol/mg tissue. The dissociation constant obtained by measurements at equilibrium was similar to that obtained by measuring the rates of association and dissociation. The high affinity binding was stereospecific, thermolabile, and highly pH dependent. Of neurotransmitters tested, dopamine was the most potent inhibitor of specific spiperone binding, followed by serotonin, epinephrine, and norepinephrine. Apomorphine was more potent than dopamine but less potent than chlorpromazine and unlabled spiperone. A direct correlation was found between the number of spiperone binding sites and the dopamine content of eight brain regions. 28 references. (Author abstract modified)

000295 Sundt, Thoralf M., Jr.; Anderson, Robert E.; Michenfelder, John D. CV Research Center, Alfred Bldg., St. Mary's Hospital, Rochester, MN 55901 **Intracellular redox states under halothane and barbiturate anesthesia in normal, ischemic, and anoxic monkey brain.** Annals of Neurology. 5(6):575-579, 1979.

Cortical reflectance, mean arterial blood pressures, electroencephalograms, and cortical blood flow were continuously recorded together with fluorescence of reduced pyridine nucleotides (PN) at various carbon dioxide tensions before, during, and following middle cerebral artery occlusion in 10 squirrel monkeys receiving halothane or barbiturate anesthesia. Measurements were continued through a nitrogen breathing cycle and to death produced by anoxia. The anesthetic agent produced no detectable differences in PN fluorescence in cerebral tissue during ischemia and anoxia. It is concluded that the known cerebral protective action of barbiturates is apparently unrelated to the intracellular redox state. 31 references. (Author abstract)

000296 Sved, Alan F.; Fernstrom, John D.; Wurtman, Richard J. Fernstrom: Dept. of Nutrition and Food Science, Massachusetts Institute of Technology, Cambridge, MA 02139 **Tyrosine administration reduces blood pressure and enhances brain norepinephrine release in spontaneously hypertensive rats.** Proceedings of the National Academy of Sciences of the USA. 76(7):3511-3514, 1979.

The effects of administration of L-tyrosine in reducing blood pressure and enhancing brain norepinephrine (NE) release in spontaneously hypertensive rats were investigated. In spontaneously hypertensive rats, a dose of 50mg/kg, ip reduced blood pressure by about 12mm Hg, while a dose of 200mg/kg produced the maximal effect (a reduction of about 40mm Hg. The maximum effect occured within 2 hr of injection. Tyrosine injection appears to reduce blood pressure via an action within the CNS, since the effect can be blocked by coadministration of other large neutral amino acids that reduced tyrosine's uptake into brain. That tyrosine's antihypertensive action is mediated by an acceleration in NE or epinephrine release within the CNS is suggested by the concurrent increase that its injection produces in brain levels of methoxyhydroxyphenylethylglycol sulfate. 23 references. (Author abstract modified)

000297 Swann, Alan C.; Marini, James L.; Sheard, Michael H.; Maas, James W. Dept. of Psychiatry, Yale University School of Medicine, New Haven, CT 06510 **Effects of chronic dietary lithium on activity and regulation of (Na,K)-adenosine triphosphatase in rat brain.** Biochemical Pharmacology. 29(20):2819-2823, 1980.

The effects of chronic dietary lithium on activity and regulation of (Na,K)-adenosine triphosphatase in rat brain were investigated. Chronic dietary administration of lithium appeared to reduce (Na,K)-adenosine triphosphatase in rat brain by at least two mechanisms. Selective inhibition of the enzyme form with high affinity for ouabain occurred in hippocampus. Nonselective inhibition, manifested by decreased Vmax for activation by Na, occurred in hippocampus, cortex, and corpus striatum. There was no effect on Na affinity. Because lithium administration decreased shock elicited fighting behavior in the presence of moderate tissue lithium levels and in the absence of changes in weight or gross appearance or behavior, the effects on adenosine triphosphatase were pharmacologic rather than toxic. 39 references. (Author abstract modified)

000298 Sylvester, Paul W.; Chen, Han Tong; Meites, Joseph. Dept. of Physiology, Neuroendocrine Research Laboratory, Michigan State University, East Lansing, MI 48824 **Effects of morphine and naloxone on phasic release of luteinizing hormone and follicle-stimulating hormone (40849).** Proceedings of the Society for Experimental Biology and Medicine. 164(2):207-211, 1980.

The effects of morphine and naloxone on the estradiol benzoate (EB) induced daily surge signal for luteinizing hormone (LH) and follicle stimulating hormone (FSH) release in ovariectomized rats, and their effects on the ability of peptides to block expression of these daily neural signals were examined. EB, followed 3 days later by EB or progesterone, morphine, and naloxone, altered the LH and FSH surges on the day of treatment and on the next day. In the EB-EB treated rats, morphine prevented, whereas naloxone enhanced the surge of LH and FSH on day 1. On day 2 the morphine treated rats showed a large rebound surge of LH and FSH, whereas the naloxone treated rats showed no surge. The effects of these drugs on the day 2 surge

of LH and FSH were found not to be the result of a buildup or depletion of releasable stores of LH in the pituitary on day 1. These results suggest a possible role for the endogenous opioid peptides in modulating steroid regulation of the neural surge signal for LH and LSH. 24 references.

000299 Taft, William C., Jr.; Abdel-Latif, Ata A.; Akhtar, Rashid A. Abdel-Latif: Dept. of Cell and Molecular Biology, Medical College of Georgia, Augusta, GA 30912 **(3H)quinuclidinyl benzilate binding to muscarinic receptors and (3H)WB-4101 binding to alpha-adrenergic receptors in rabbit iris: comparison of results in slices and microsomal fractions.** Biochemical Pharmacology. 29(20):2713-2720, 1980.

The binding characteristics of (3H)-(1)-quinuclidinyl benzilate (QNB) and (3H)WB-4101 to microsomal fractions and slices from rabbit iris muscle were compared. (3H)QNB binding to both microsomal fractions and muscle slices was of high affinity and low capacity and was displaced by muscarinic ligands. The equilibrium dissociation constants (KD) for (3H)QNB binding to microsomes and slices were 0.069nM and 1.97nM respectively. The findings of comparable binding patterns for (3H)QNB and (3H)WB-4101 binding to microsomal fractions and intact muscle slices argue against the possibility of alterations in receptor properties following tissue disruption. It is proposed that the differences in receptor mediated biochemical responses that are seen between intact tissue and cell free homogenates, such as the phosphoinositide effect, are more likely to be due to alterations in receptor function, e.g., changes in ionic permeabilities, rather than to actual changes in receptor properties. 32 references. (Author abstract modified)

000300 Tang, S. W.; Helmeste, D. M.; Stancer, H. C. Stancer: Dept. of Psychiatry, University of Toronto, 250 College St., Toronto, Ontario, Canada M5T 1R8 **Interaction of antidepressants with clonidine on rat brain total 3-methoxy-4-hydroxyphenylglycol.** Canadian Journal of Physiology and Pharmacology. 57(4):435-437, 1979.

Male Wistar rat brain concentrations of 3-methoxy-4-hydroxyphenylglycol (MHPG) were decreased by desipramine, increased by mianserine, and not altered by a variety of other antidepressant drugs. Desipramine and mianserine were also the only antidepressants tested that attenuated the clonidine-induced decrease in brain MHPG. The tertiary amine tricyclic antidepressants amitriptyline and imipramine enhanced the effect of clonidine on MHPG. Results indicate that antidepressants are heterogenous in their effects on brain noradrenergic mechanisms in the rat. 17 references. (Author abstract modified)

000301 Tavani, Alessandra; Luini, Alberto; Manara, Luciano. Manara: Instituto di Ricerche Farmacologiche Mario Negri, Via Eritrea, 62 I-20157 Milan, Italy **Time course of etorphine levels in tissues of opiate tolerant and nontolerant rats.** Journal of Pharmacology and Experimental Therapeutics. 211(1):140-144, 1979.

Tissue levels of (3H)etorphine were determined after i.v. administration of 0.2 or 2mcg/kg to morphine tolerant or control male Sprague-Dawley rats. Etorphine levels in the cerebral hemispheres, brainstem, plasma, and skeletal muscles of morphine tolerant rats given the higher dose were lower than in controls. No significant differences were seen with the lower dose. Bromsulphalein clearance studies indicated that the higher dose of etorphine impaired drug clearance in the nontolerant animals. (Author abstract modified)

000302 Thomas, J. A.; Sakai, K. K.; Holck, M. I.; Marks, B. H. Wayne State University, School of Medicine, Dept. of Pharmacology, Detroit, MI 48201 **Dopamine-beta-hydroxylase: a modulator of beta adrenergic receptor activity.** Research Communications in Chemical Pathology and Pharmacology. 29(1):3-13, 1980.

The beta-adrenergic mediated desensitization of the hyperpolarization response to norepinephrine (NE) in rat pinealocyte membranes was rapidly reversed by infusion of dopamine-beta-hydroxylase (DBH). DBH infusion also augmented the cyclic AMP response to isoproterenol in vitro. It is suggested that the dissociation of the concentrations of NE and DBH released into the synaptic cleft by continuous sympathetic nerve stimulation produces a relative DBH deficiency associated with beta-receptor desensitization. DBH may augment the rate at which agonist recognizes the beta-receptor and couples to adenylate cyclase or may directly increase the activity of adenylate cyclase. 23 references. (Author abstract modified)

000303 Ticku, M. K. Division of Molecular Pharmacology, Dept. of Pharmacology, University of Texas Health Science Center, San Antonio, TX 78284 **Differences in gamma-aminobutyric acid receptor sensitivity in inbred strains of mice.** Journal of Neurochemistry. 33(5):1135-1138, 1979.

GABA receptor sensitivities in DBA/2J and C57BL/6J mice were compared. The two strains gave similar saturation binding curves when (3H)GABA was used as ligand, revealing two classes of binding sites. Scatchard analysis of the binding data indicated that DBA mice had significantly higher binding affinities and lower binding capacities than C57 mice. Comparison of regional distributions of binding sites in the two strains indicated that GABA receptor density was relatively low in the hippocampus, striatum, diencephalon, and cerebral cortex of the DBA mice. 28 references.

000304 Treiser, Susan; Kellar, Kenneth J. Dept. of Pharmacology, Georgetown University, School of Medicine, Washington, DC 20007 **Lithium: effects on serotonin receptors in rat brain.** European Journal of Pharmacology. 64(2/3):183-185, 1980.

The effects of lithium on serotonin receptors in rat brain were investigated. Chronic administration of lithium resulted in reduced density of serotonin receptors in the hippocampus. No apparent effects were found in the cortex. It is reported that lithium in vitro had no effect on serotonin receptors in the cortex or hippocampus. 9 references. (Author abstract)

000305 Triner, Lubos; Vulliemoz, Yvonne; Woo, Sook-Young; Verosky, Mariagnes. Dept. of Anesthesiology, Columbia University College of Physicians and Surgeons, 630 West 168th St., New York, NY 10032 **Halothane effect on cAMP generation and hydrolysis in rat brain.** European Journal of Pharmacology. 66(1):73-80, 1980.

The effect of halothane on adenylate cyclase and phosphodiesterase activities in female Sherman rat cerebellum and cerebral cortex was determined. Results showed that the volatile anesthetic increased the rate of cyclic AMP generation and decreased the rate of cyclic AMP hydrolysis. The effect of halothane on adenylate cyclase was calcium independent and differed from the actions of guanine nucleotides, sodium fluoride, and specific transmitters. It is suggested that halothane may produce conformational changes in the enzyme that render more catalytic sites operative. 24 references. (Author abstract modified)

000306 Valchar, M.; Metysova, J.; Dlabac, A. Kourimska 17, 130 60 Prague 3, Czechoslovakia **The effect of a new fluorinated tricyclic neuroleptic drug isofloxythepin on the rat striatal dopamine metabolism.** Activitas Nervosa Superior. 21(3):130-131, 1979.

The effect of a new fluorinated tricylic neuroleptic drug (isofloxythepin) on rat striatal dopamine (DA) metabolism was investigated. The effects of isofloxythepin, teflutixol, and octo-

clothepin on DA metabolism were compared at 3 hour intervals following oral administration of each of the drugs. Isofloxythepin and teflutixol increased mainly 3,4-dihydroxypehnylacetic acid (DOPAC), whereas octoclothepin considerably increased striatal levels of both homovanvillic acid (HVA) and DOPAC. Although the elevation of striatal levels of HVA and DOPAC was maximal at 24 hours, isofloxythepin decreased striatal DA up to 96 hours following administration. The influence of isofloxythepin on the striatal DA metabolism indicates its qualities as a neuroleptic drug with prolonged action. 5 references.

000307 Valentovic, Monica; Bachmann, Kenneth. Bachmann: University of Toledo College of Pharmacy, 2801 W. Bancroft, Toledo, OH 43606 **Effects of urea on hexobarbital and antipyrine disposition in rats.** Pharmacology. 21(3):167-174, 1980.

Hexobarbital sleep times, antipyrine-induced temperature depression, in vitro hexobarbital metabolism, and antipyrine half-life were measured in female Sprague-Dawley rats pretreated with saline or urea. Urea pretreatment slowed hexobarbital metabolism, prolonged hexobarbital sleep time, and shortened the duration of antipyrine-induced temperature depression as well as the half-life of antipyrine. It is suggested that urea contributes to the changes in drug metabolism reported for nephrectomized rats and to the aberrations of drug metabolism accompanying uremia in humans. 16 references. (Author abstract modified)

000308 van Calker, Dietrich; Muller, Margarete; Hamprecht, Bernd. Max-Planck-Institut fur Biochemie, D-8033 Martinsried, Germany **Adenosine regulates via two different types of receptors, the accumulation of cyclic AMP in cultured brain cells.** Journal of Neurochemistry. 33(5):999-1005, 1979.

In glial cell cultures derived from perinatal mouse brain, submicromolar concentrations of adenosine submicromolar concentrations of adenosine inhibited the increase in intracellular cyclic AMP level induced by beta-adrenoceptor agonists, but larger concentrations of adenosine increased cyclic AMP levels. Both effects were antagonized by methylxanthines, but not by blockage of adenosine uptake or inhibition of phosphodiesterase activity. In both cases, activity was dependent on the integrity of the ribose moiety of the nucleotide. The order of potency of adenosine analogs was different for the two effects. Results indicate that the two effects are mediated by two different adenosine receptors on the outer surface of the cells. 43 references. (Author abstract modified)

000309 Vanderwolf, C. H.; Robinson, T. E.; Pappas, B. A. Dept. of Psychology, University of Western Ontario, London, Ontario, N6A 5C2 Canada **Monoamine replacement after reserpine: catecholaminergic agonists restore motor activity but phenylethylamine restores atropine-resistant neocortical low voltage fast activity.** Brain Research. 202(1):65-77, 1980.

The influence of catecholaminergic agonists and phenylethylamine on the reserpine-induced abolition of an atropine resistant form of neocortical low voltage fast activity (LVFA), which normally accompanies certain patterns of motor activity in rats, was examined. The following compounds, along or in various combinations, failed to restore atropine resistant LVFA in reserpinized rats even though spontaneous motor activity was restored in many cases: L-dopa after pretreatment with an inhibitor of peripheral L-aromatic amino acid decarboxylase; 5-hydroxytryptophan; d-amphetamine; apomorphine; lysergic acid diethylamide; and clonidine. In contrast, beta-phenylethylamine was quite effective in restoring atropine resistant LVFA, and its effects were not diminished by pretreatment with alpha-methyl-p-tyrosine, chlorpromazine, or trifluoperazine. It is suggested that a trace amine plays an essential role in the production of atropine resistant LVFA independent of catecholamines. 29 references. (Author abstract modified)

000310 Vanderwolf, C. H.; Pappas, B. A. Dept. of Psychology, University of Western Ontario, London, Ontario N6A 5C2, Canada **Reserpine abolishes movement-correlated atropine-resistant neocortical low voltage fast activity.** Brain Research. 202(1):79-94, 1980.

Reticulocortical mechanisms which control the appearance of low voltage fast activity (LVFA) in the EEG were investigated. Following a large dose of atropine, rats display large amplitude slow waves in the neocortex during immobility, tremor, tooth chattering, and face washing (type II behavior) but display LVFA during walking, struggling, postural changes, and head movement (type I behavior). Rats treated with a large dose of reserpine ususally continue to display LVFA during immobility as well as during movement, although large amplitude slow waves are present more frequently than normal. A combination of reserpine and atropine abolished all LVFA. In rats treated with nialamide prior to reserpine and atropine, LVFA continues to occur in association with type I behavior just as in rats given atropine alone. It is proposed that the occurrence of LVFA in the neocortex is determined by two distinct reticulocortical systems. A cholinergic system produces all LVFA occurring during type II behavior and a second system, dependent on a monoamine, produces LVFA in association with type I behavior. The view that LVFA is a correlate of arousal or the sleep/waking cycle is criticized. 50 references. (Author abstract modified)

000311 Vaught, Jeffry L.; Takemori, A. E. Takemori: Dept. of Pharmacology, University of Minnesota, 105 Millard Hall, 435 Delaware St., Minneapolis, MN **A further characterization of the differential effects of leucine enkephalin, methionine enkephalin and their analogs on morphine-induced analgesia.** Journal of Pharmacology and Experimental Therapeutics. 211(2):280-283, 1979.

Leucine-enkephalin potentiated morphine-induced analgesia in male Swiss-Webster mice. A subanalgesic intracerebroventicular dose of (D-Ala2,D-Leu5)-enkephalin markedly enhanced morphine analgesia, but subanalgesic doses of (D-Ala2)-met-enkephalinamide had no effect. Results suggested that the enhancement of morphine-induced analgesia by leucine enkephalin was receptor mediated and dependent on the intact parent pentapeptide. Differential interactions of leucine-enkephalin and methionine-enkephalin with morphine are discussed. 16 references. (Author abstract modified)

000312 Vosmer, Georgetta; DeMet, Edward M.; Halaris, Angelos E. Halaris: V.A. Hospital, Brentwood, 11301 Wilshire Blvd., Los Angeles, CA 90073 **Action of the antidepressant pridefine (AHR-1118) on biogenic amines in the rat brain.** Biochemical Pharmacology. 29(19):2557-2562, 1980.

The mode of action of the antidepressant pridefine (AHR-1118) on biogenic amines in the rat brain was investigated. Regional levels of norepinephrine, dopamine, and 5-hydroxytryptamine were measured following pridefine administrations in rats pretreated with saline or reserpine. Only hypothalamic levels of norepinephrine were increased significantly in both control and reserpinized rats. In vitro effect of pridefine on transmitter uptake and release were examined. Uptake blockade predominated but some releasing activity was present, leading to the conclusion that the drug is a reuptake blocker. Ex vivo uptake experiments confirmed the results of in vitro studies and indicate that the drug reaches active sites. 23 references. (Author abstract modified)

000313 Waddingham, S.; Belknap, J. K. Dept. of Pediatrics, University of Texas Health Science Center, San Antonio, TX

78284 **Barbiturate dependence in mice: effects of propranolol on the withdrawal syndrome (40798).** Proceedings of the Society for Experimental Biology and Medicine. 163(4):469-472, 1980.

The effects of propranolol on the barbiturate withdrawal syndrome were tested using male C57BL/6J mice. In experiment propranolol administered to mice either intraperitoneally or intracranially significantly reduced the incidence of seizures when compared to controls, but only when animals were observed within one hour of injection. In the second experiment, both stereoisomers of propranolol produced a signficant reduction in seizure frequency relative to control values. No other withdrawal sign category was significantly affected by either isomer. Results suggest that propranolol may be of some value in the treatment of barbiturate withdrawal. Because the intracranial dose, although representing only 1.5% of the intraperitoneal dose, was equally effective in reducing the frequency of seizures, it is suggested that the anticonvulsant effects were due to actions in the CNS, and that the propranolol itself was responsible rather than a hepatically derived active metabolite such as propranolol glycol. 18 references.

000314 Wakade, Arun R. Dept. of Pharmacology, State University of New York, Downstate Medical Center, Brooklyn, NY 11203 **A comparison of rates of depletion and recovery of noradrenaline stores of peripheral and central noradrenergic neurones after reserpine administration: importance of neuronal activity.** British Journal of Pharmacology. 68(1):93-98, 1980.

The noradrenaline (NA) content of various peripheral sympathetic neuroeffector organs and brain was measured at various times after different doses of reserpine were administered to the rat. Among the various sympathetic neuroeffector organs of the rat, the heart appears to be the organ most sensitive to the depleting action of reserpine. Reserpine was found to lower the NA content of the guinea-pig atrium more effectively when intramural nerve terminals of the tissue are excited. In vitro reduction in NA content, caused by reserpine plus transmural stimulation, was even more pronounced after treatment of the isolated vas deferens of the rat with tetraethlammonium. It is suggested that different rates of depletion following in vivo administration of reserpine are mainly due to variation in neuronal activity of different sympathetic neuroeffector organs. 16 references. (Author abstract modified)

000315 Waldmeier, Peter C. Research Dept., Pharmaceuticals Division, Ciba-Geigy Ltd., Switzerland **Analysis of the activation of dopamine metabolism by a serotonin uptake inhibitor.** European Journal of Pharmacology. 60(4):315-322, 1979.

The serotonin (5-HT) uptake inhibitor CGP-6085A potentiated the haloperidol-induced increase in rat striatal levels of homovanillic acid and 3,4-dihydroxyphenylacetic acid. The potentiation was antagonized by scopolamine and baclofen. The potentiation disappeared more rapidly than the uptake inhibitory effects of CGP-6085A, presumably because the effects of uptake inhibition were counteracted by a reduction in 5-HT synthesis. CGP-6085A also potentiated the effects of fluphenazine and pimozide, but not those of thioproperazine, chlorpromazine, clozapine, or sulpiride. CGP-6085A did not restore the effects of haloperidol in animals treated chronically with haloperidol. Results suggest that CGP-6085A stimulates dopamine neurons only if their activity is already above the resting level. 31 references. (Author abstract modified)

000316 Waldmeier, Peter C.; Baumann, Peter A.; Maitre, Laurent. Research Dept., Pharmaceutical Division, Ciba-Geigy Ltd., CH-4002 Basel, Switzerland **CGP 6085 A, a new, specific, inhibitor of serotonin uptake: neurochemical characterization and comparison with other serotonin uptake blockers.** Journal of Pharmacology and Experimental Therapeutics. 211(1):42-49, 1979.

The effects of 4-(5,6-dimethyl-2-benzofuranyl)piperidine hydrochloride (CGP-6085-A), nitalapram, zimelidine, femoxetine, and fluoxetine on the uptake of serotonin and norepinephrine were compared in several in vivo and in vitro test systems. All were selective inhibitors of 5-HT uptake and more potent in vivo than in vitro. CGP-6085-A and nitalapram were the most potent of the compounds tested. (Author abstract modified)

000317 Wang, James K. T.; Taniguchi, Takashi; Spector, Sydney. Dept. of Pharmacology, Columbia University, New York, NY 10032 **Properties of (3H)diazepam binding sites on rat blood platelets.** Life Sciences. 27(20):1881-1888, 1980.

Intact rat blood platelets were shown to possess benzodiazepine binding sites of the peripheral type, binding of (3H)diazepam being strongly inhibited by Ro5-4864 but only weakly inhibited by clonazepam. Binding of (3H)diazepam was found to be specific and saturable. Scatchard analysis reveals a single class of binding sites; the Hill coefficient indicates a lack of binding site heterogeneity or negative cooperativity. Binding reached equilibrium at 6 min and was rapidly reversible. Binding of (3H)diazepam was found to be linear with platelet number, temperature sensitive with maximum binding at zero degree C, and to have a broad optimal pH range between pH 5 to pH 9. 18 references. (Author abstract modified)

000318 Wassef, Nabila M.; Smith, Alfred A. Dept. of Pharmacology, New York Medical College, Valhalla, NY 10595 **Inhibition of growth in young mice treated with pentazocine: reversal by naltrexone.** European Journal of Pharmacology. 66(2/3):155-160, 1980.

Significant weight loss was observed in developing Swiss-Webster mice treated daily with metadone (5mg/kg) or pentazocine (10 and 20mg/kg) for 3 weeks, but not in those treated with naltrexone, naloxone, nalorphine, or nalbuphine. Protein synthesis was decreased in the brain, liver, and muscle of the methadone and pentazocine group treated mice, but not in the other drug groups. When naltrexone was given concomitantly with pentazocine, the opiate antagonist blocked pentaxoncine's growth retardant effects. 19 references. (Author abstract modified)

000319 Waszczak, Barbara L.; Hruska, Robert E.; Walters, Judith R. NINCDS, 9000 Rockville Pike, Bldg. 36, Room 5A31, Bethesda, MD 20205 **GABAergic actions of THIP in vivo and in vitro: A comparison with muscimol and GABA.** European Journal of Pharmacology. 65(1)21-29, 1980.

GABAmimetic actions of 4,5,6,7-tetrahydroisoxazolo-(5,4-c)-pyridin-3-ol (THIP) were evaluated both in vivo and in vitro and compared with the actions of muscimol and GABA. The GABAergic potencies of these agents were assessed in vivo by measuring their ability to inhibit firing of rat substantia nigra pars reticulata neurons after systemic administration and iontophoretic applications, and in vitro by measuring their ability to inhibit 3H-GABA binding to rat cerebellar membranes. The effects of THIP were found to be similar to those of muscimol and GABA with regard to inhibition of reticulata cell firing and (3H)GABA binding. The order of potency was muscimol greater than GABA greater than Thip. The magnitude of the differences between drug potencies in iontophoretic studies closely paralleled their relative potencies in binding studies, with muscimol approximately three times more potent than GABA and 25 to 40 times more potent than THIP. After systemic administration, however, muscimol was only three times more potent than THIP in inhibiting reticulata cell firing, possibly because THIP

passes the blood/brain barrier more readily. 29 references. (Author abstract)

000320 Waszczak, Barbara L.; Walters, Judith R. Experimental Therapeutics Branch, NINCDS, NIH, 9000 Rockville Pike, Bldg. 36, Room 5A31, Bethesda, MD 20205 **Intravenous GABA agonist administration stimulates firing of A10 dopaminergic neurons.** European Journal of Pharmacology. 66(1):141-144, 1980.

Intravenous injections of the GABA agonists muscimol and 4,5,6,7-tetrahydroisoxazolo-(5,4-c)-pyridin-3-ol (THIP) caused dose related increases in extracellular, single unit activity of A10 dopaminergic neurons of the ventral tegmental area in rats. Muscimol was 15 to 20 times more potent than THIP and caused a maximum stimulation of 150% of baseline firing rate, compared to 140% for THIP. These results suggest that GABA agonists may worsen rather than improve the symptoms of schizophrenics. 10 references. (Author abstract modified)

000321 Weidler, D. J.; Jallad, N. S.; Black, K. L.; Wagner, J. G. Dept. of Pharmacology (D7-3), University of Miami School of Medicine, P.O. Box 015996, Miami, FL 33101 **Alteration of pharmacokinetic parameters for pentobarbital by ischemic stroke and reversion to normal by dexamethasone treatment.** Journal of Clinical Pharmacology. 20(8-9):543-551, 1980.

Pharmacokinetic parameters for pentobarbital (50mg/kg) were determined in 12 cats subjected to acute ischemic stroke by ligation of the left middle cerebral artery and in 6 control cats. Ischemic stroke significantly prolonged the plasma half-life of pentobarbital, reduced plasma clearance, and increased the area under the plasma pentobarbital concentration/time curve. All these effects were prevented by concurrent administration of dexamethasone (4mg/kg). Dexamethasone did not prevent the reduction in volume of distribution seen in ischemic cats. 29 references. (Author abstract modified)

000322 Wellman, Paul Jeff. Iowa State University **Influence of amphetamine and phenylpropanolamine on food intake, activity, and body temperature in rats with ventromedial hypothalamic or dorsolateral tegmental damage.** Dissertation Abstracts International. 41(3):1152-B, 1980. Ann Arbor, Unvi. Microfilms No. 8019676, 132p., 1980.

The mediation of amphetamine anorexia by putative satiety mechanisms in either the ventromedial hypothalamus (VMH) or the dorsolateral tegmentum (DLT) is reexamined controlling a number of procedural problems evident in earlier work such as body weight level during drug testing. The anorexic properties of amphetamine and phenylpropanolamine were assessed in fasted female control, VMH, and DLT rats. When the rats were offered a palatable high fat diet, both VMH and DLT rats exhibited attenuated amphetamine anorexia but when a pellet test diet was tried only the DLT rats displayed an attenuated anorexia. When fed a pellet test diet, DLT rats displayed anorexia to phenylpropanolamine that was indistinguishable from VMH and control rats. It is suggested that rats with DLT destruction continue to feed following amphetamine treatment because amphetamine does not induce hyperthermia in these animals. (Journal abstract modified)

000323 Wemer, Johan; van der Lugt, Johannes C.; de Langen, Cees D. J.; Mulder, Arie H. Mulder: Dept. of Pharmacology, Free University Medical Faculty, Van der Boechorststraat 7, 1081 BT Amsterdam, The Netherlands **On the capacity of presynaptic alpha receptors to modulate norepinephrine release from slices of rat neocortex and the affinity of some agonists and antagonists for these receptors.** Journal of Pharmacology and Experimental Therapeutics. 211(3):445-451, 1979.

The capacity of presynaptic alpha-receptors on noradrenergic varicosities to modulate norepinephrine (NE) release in the male Wistar rat neocortex was examined. The affinities of alpha-receptor agonists (NE and oxymetazoline) and antagonists (phentolamine and yohimbine) for these receptors were also determined. Results indicate that presynaptic alpha-recpetors are not pharmacologically similar to postsynaptic alpha-receptors. 20 references. (Author abstract modified)

000324 Westerink, Ben H. C.; Dijkstra, Durk; Feenstra, Matthijs G. P.; Horn, Alan S.; Rollema, Hans. Dept. of Pharmacy, University of Groningen, Antonius Deusinglaan 2, 9713 AW Groningen, The Netherlands **Selective storage in vivo of 5,6-ADTN in dopamine rich areas of the rat brain.** European Journal of Pharmacology. 64(2/3):115-121, 1980.

The mechanism of the selective storage of the dopamine agonist 2-amino-5,6-dihydroxytetrahydronaphthalene (5,6-ADTN, used as the esterified prodrug) in density innervated dopaminergic brain structures in the rat was investigated. The accumulation of 5,6-ADTN in dopamine rich areas appeared to be nonsaturable at the doses studied. With a unilateral 6-OHDA lesion there was a corresponding unilateral decrease in 5,6-ADTN concentrations which suggests that the agonist interacts with dopamine uptake or storage mechanisms. Apart from an initial decreased penetration in the brain, reserpine-induced depletion of dopamine stores did not influence the accumulation of 5,6-ADTN in dopamine rich areas. It is suggested that 5,6-ADTN is taken up on th so called dopamine pool". It is reported that, unexpectedly, reserpine pretreatment caused a long-lasting (at least 170 hr) decrease of 5,6-ADTN distribution in non-dopaminergic structures. It is suggested that 5,6-ADTN could have a role to play in the elucidation of the significance of the various dopamine pools. 21 references. (Author abstract)

000325 Whitaker, Patricia M.; Cross, Alan J. Division of Psychiatry, Clinical Research Centre, Harrow, England **3H-mianserin binding in calf caudate: possible involvement of serotonin receptors in antidepressant drug action.** Biochemical Pharmacology. 29(19):2709-2712, 1980.

The binding of 3H-mianserin in calf caudate was investigated, and the possible involvement of serotonin receptors in the antidepressant action of mianserin was assessed. A wide range of antidepressants were found to compete for bound 3H-mianserin with relatively high potency (tricyclics, nomifensine, maprotiline, etc.). It appears that if 3H-mianserin is labelling one specific type of neurotransmitter receptor, that receptor is mostly serotonergic in binding characteristics. It remains possible, however, that 3H-mianserin is labelling a collection of receptor types and that the other neurotransmitter receptors involved are histaminergic and alpha-adrenergic. The possibility that a common site of action of antidepressants is on serotonergic receptors is discussed. 23 references.

000326 Wiech, N. L.; Ursillo, R. C. Merrell Research Center, Merrell National Laboratories, Cincinnati, OH 45215 **Acceleration of desipramine-induced decrease of rat corticocerebral beta-adrenergic receptors by yohimbine.** Communications in Psychopharmacology. 4(2):95-100, 1980.

The effect of yohimbine, a selective inhibitor of adrenergic receptors on the beta-adrenergic receptor density was examined. Rats were treated chronically once daily with desipramine (5mg/kg). A significant decrease in corticocerebral 3H-dihydroalprenolol binding was seen only after 6 weeks of drug administration. When the same desipramine treatment was combined with twice daily yohimbine injections (2mg/kg), a significant decrease in beta-adrenergic receptor density was obtained only after 4 days. A concomitant 4 day experiment showed no

beta-receptor changes with desipramine or yohimbine treatment alone. 12 references. (Author abstract modified)

000327 Wilkison, Douglas M.; Halpern, Lawrence M. Dept. of Pharmacology and Toxicology, Medical College of Wisconsin, P.O. Box 26509, Milwaukee, WI 43226 **The role of biogenic amines in amygdalar kindling. I. Local amygdalar afterdischarge.** Journal of Pharmacology and Experimental Therapeutics. 211(1):151-158, 1979.

The role of biogenic amines in the regulation and development of local epileptiform afterdischarge (AD) induced by amygdaloid kindling in male Sprague-Dawley rats was studied. Reserpine and tetrabenazine transiently augmented local AD activity and delayed the permanent development of long-lasting multiphasic spike trains (type-2 ADs). Pargyline delayed the development of type-2 ADs associated with increasing brain levels of biogenic amines. Parachlorophenylalanine methylester had no effect on AD development. Alpha-methyl-p-tyrosine methylester depleted catecholamines and delayed AD development. (Author abstract modified)

000328 Wood, Paul L.; Cheney, D. L. Laboratory of Preclinical Pharmacology, NIMH, Saint Elizabeths Hospital, Washington, DC 20032 **The effects of muscarinic receptor blockers on the turnover rate of acetylcholine in various regions of the rat brain.** Canadian Journal of Physiology and Pharmacology. 57(4):404-411, 1979.

The antimuscarinic drugs benztropine, trihexyphenidyl, and scopolamine increased acetylcholine (ACh) turnover in male Sprague-Dawley rat hippocampus and thalamus, decreased it in cortex, and did not alter striatal turnover. ACh concentration in cortex and striatum was decreased, but ACh levels in hippocampus and thalamus were unaltered. Additional studies of the cholinergic septohippocampal pathway argued against an in vivo action of these drugs on presynaptic or cell body muscarinic autoreceptors. Muscarinic receptor blockers apparently increased ACh turnover only in areas where a feedback loop is operative and may act by inhibiting a neuronal feedback loop involving at least one noncholinergic interneuron. 53 references. (Author abstract modified)

000329 Wu, P. H.; Phillis, J. W. Phillis: Dept. of Physiology, College of Medicine, University of Saskatchewan, Saskatoon, Saskatchewan S7N 0W0, Canada **Metergoline antagonism of 5-hydroxytryptamine-induced activation of rat cerebral cortical (Na-K)ATPase.** Journal of Pharmacy and Pharmacology. 31(11):782-784, 1979.

The effects of 5-hydroxytryptamine (5-HT) and its structural analogues on the sodium/potassium dependent adenosine triphosphatase (Na-KATPase) in homogenates of male Sprague-Dawley rat cerebral cortex were examined. Results showed that the enzyme was stimulated by 5-HT oxalate, but not by tryptamine. Slight stimulation was also observed with high concentrations of 5-hydroxyindoleacetic acid. The stimulation induced by 5-HT oxalate was reversed by metergoline, suggesting the effect was mediated by 5-HT receptors. 22 references.

000330 Wu, P. H.; Phillis, J. W.; Bender, A. S. Dept. of Physiology, College of Medicine, University of Saskatchewan, Saskatoon, Saskatchewan, Canada S7N OWO **Inhibition of (3H)diazepam binding to rat brain cortical synaptosomal membranes by adenosine uptake blockers.** European Journal of Pharmacology. 65(4):459-460, 1980.

The binding of tritiated diazepam to rat brain cortical synaptosomes was inhibited by dipyridamole, hexobendine, papaverine, and 6-(2-hydroxy-5-nitrobenzyl)thioguanosine. The potencies of these drugs as inhibitors of 3H-diazepam binding paralleled their potencies as inhibitors of adenosine uptake. Results suggest that benzodiazepines may exert part of their pharmacological action through inhibition of adenosine uptake. 5 references.

000331 Yim, Chi Yiu; Mogenson, Gordon J. Dept. of Physiology, University of Western Ontario, London, Ontario, Canada **Effect of picrotoxin and nipecotic acid on inhibitory response of dopaminergic neurons in the ventral tegmental area to stimulation of the nucleus accumbens.** Brain Research. 199(2):466-472, 1980.

The effect of picrotoxin and nipecotic acid on inhibitory response of dopaminergic neurons in the ventral tegmental area to stimulation of the nucleus accumbens were investigated. Electrical stimulation of nucleus accumbens inhibited the activity of neurons in the ventral tegmental area (VTA). Inhibition was potentiated by nipecotic acid, a GABA uptake inhibitor, and was attenuated by picrotoxin, a GABA antagonist. Four units inhibited by nucleus accumbens stimulation were also antidromically activated. These observations suggest that neurons in the VTA, including specifically those projecting to the nucleus accumbens, receive a descending GABAergic input from that area. 17 references. (Author abstract modified)

000332 Zackova, P.; Nemcova, J.; Kvetina, J. Farmaceuticka fakulta UK, katedra farmakologie a toxikologie, Hradec Kralove, ul. akad. Heyrovskeho 1203, Czechoslovakia **Cardiovascular response to the interaction of ethanol and some benzodiazepines in rats.** Activitas Nervosa Superior. 21(3):185-186, 1979.

Cardiovascular response (arterial blood pressure and heartrate) to the interaction of ethanol and benzodiazepines (diazepam, nitrazepam) were investigated in rats. Both diazepam and nitrazepam decreased blood pressure, and this action was potentiated by alcohol. At the time of maximum effect (10 to 30 minutes), 15% of the nitrazepam/alcohol animals died from rapid blood pressure fall. Results of a separate experiment indicate that the greatest interaction between ethanol pretreatment and diazepam administration occurred at a 30 minute interval. It is hypothesized that the observed cardiovascular changes are caused by a central depressive effect resulting from increased concentration of brain benzodiazepines at higher ethanol level in blood. 6 references.

000333 Zigmond, Richard E. Dept. of Pharmacology, Harvard Medical School, Boston, MA 02115 **The long-term regulation of ganglionic tyrosine hydroxylase by preganglionic nerve activity.** Federation Proceedings. 39(12):3003-3008, 1980.

The role of neural activity in the long-term regulation of tyrosine hydroxylase in peripheral adrenergic neurons was studied by electrically stimulating the preganglionic nerves innervating the superior cervical ganglion. Tyrosine hydroxylase activity was elevated maximally 3 days after stimultion. The magnitude of the increase varied from 25% to 120% depending on the frequency and duration of the stimulation. Dopamine-beta-hydroxylase activity was also increased after preganglionic nerve stimulation, but there was no change in dopa decarboxylase activity or in the ganglion protein content. The increase in tyrosine hydroxylase activity is paralleled by a comparable increase in the amount of immunoreactive tyrosine hydroxylase in the ganglia. This increase in enzyme activity could be prevented by pretreating animals with the ganglion blocking drugs hexamethonium or chlorisondamine but was unaffected by administration of atropine or dihydroergotamine. Antidromic stimulation did not mimic the effects of orthodromic stimulation, indicating that an increase in the firing rate of the neurons was not a sufficient condition for the long-term elevation of tyrosine hydroxylase activity. These studies demonstrate that periods of increased synaptic stimulation can alter the protein composition of sympa-

thetic neurons, increasing the specific activity of the key enzyme involved in their transmitter biosynthesis. 16 references. (Author abstract modified)

04 MECHANISM OF ACTION: BEHAVIORAL

000334 Ahlenius, Sven. Dept. of Biotechnology, National Defence Research Institute, Karolinen, S-651 80 Karlstad, Sweden **Enhanced suppression of conditioned avoidance response by haloperidol but not phenoxybenzamine in rats with bilateral parafascicular lesions.** Experimental Brain Research. 40(2):164-169, 1980.

The enhanced suppression of a conditioned avoidance response by haloperidol but not phenoxybenzamine in rats with bilateral parafiscicular nucleus (PF) lesions is described. Bilateral lesions in the PF of the thalamus in male rats had little or no effect on the performance of a preoperatively acquired conditioned avoidance response. However, the PF lesioned animals displayed an enhanced response to the dopamine receptor blocking agents haloperidol or pimozide but not to the noradrenaline receptor blocking agent phenoxybenzamine. The results indicate that intralaminar thalamic nuclei and dopaminergic extrapyramidal motor pathways are functionally connected. 36 references. (Author abstract modified)

000335 Ahlenius, Sven; Heimann, Mikael; Larsson, Knut. Dept. of Pharmacology, University of Goteborg, Fack. S-400 33 Goteborg, Sweden **Prolongation of the ejaculation latency in the male rat by thioridazine and chlorimipramine.** Psychopharmacology. 65(2):137-140, 1979.

The prolongation of the ejaculation latency in the male rat by thioridazine and chlorimipramine is reported. Thioridazine and chlorimipramine prolonged the ejaculation latency and increased the number of mounts but did not change the number of intromissions preceding ejaculation. Blockade of peripheral and central noradrenaline receptors by phentolamine and phenoxybenzamine respectively resulted in a suppression of all aspects of the sexual behavior with increasing doses. DL-5-HTP in combination with an inhibitor of peripheral 5-HTP decarboxylase (benserazide) produced, like chlorimipramine and thioridazine, a prolongation of ejaculatory latency and an increase in the number of mounts preceding ejaculation. Selective inhibition of 5-HT reuptake however, by zimelidine or alaproclate did not affect the mating behavior. At higher doses of these drugs some animals failed to initiate sexual activities. There was an increase in the postejaculatory interval but no change in the ejaculatory latency. It is concluded that the prolonged ejaculation latencies observed following treatment with thioridazine or chlorimipramine is not due to a blockade of central or peripheral adrenergic alpha-receptors. 19 references. (Author abstract modified)

000336 Alleva, Enrico; Castellano, Claudio; Oliverio, Alberto. Istituto di Fisiologia Generale, Univesita di Roma e Lab. di Psicobiologica e Psicofarmacologia, CNR, via Reno 1, I-00198 Rome, Italy **Effects of L- and D-amino acids on analgesia and locomotor activity of mice: their interaction with morphine.** Brain Research. 198(1):249-252, 1980.

The effects of L-amino acids (LAA) and D-amino acids (DAA) on analgesia and locomotor activity of mice and their interaction with morphine were investigated in two strains of mice, C57BL/6 and DBA/2J. Results indicate that: 1) in addition to DAA, LAA exert an analgesic effect; 2) DAA and LAA do not produce an increase of locomotor behavior similar to the running fit produced by morphine; 3) when the analgesic effect is considered, the different sensitivity of DBA and C57 mice was quantitatively similar to that evident for the effect of morphine in these two strains; and 4) there is a synergic analgesic effect of DAA and morphine while no synergism is evident when the locomotor activity is considered. This fact supports previous findings and suggests that different mechanisms and/or morphine receptors are implicated for the analgesic and excitatory effects of morphine. 7 references.

000337 Amir, Shimon; Galina, Z. Harry; Blair, Richard; Brown, Zavie W.; Amit, Zalman. Isotope Dept., Weizmann Institute of Science, Rehovot, Israel **Opiate receptors may mediate the suppressive but not the excitatory action of ACTH on motor activity in rats.** European Journal of Pharmacology. 66(4):307-313, 1980.

High doses of adrenocorticotropic hormone (ACTH, 100 or 200mcg/kg) and naltrexone (2.0mg/kg) depressed motor activity in male Wistar rats in an open-field test, but smaller doses (50mcg/kg ACTH; 0.125 and 0.25mg/kg naltrexone) stimulated activity. At a dose level that had no direct effect on motor activity, naltrexone blocked the suppressive effect of the high doses of ACTH without altering the stimulant effect of the 50mcg/kg dose. Chronic naltrexone treatment enhanced sensitivity to the suppressive effect of ACTH, but not to its stimulating effect. It is suggested that opiate receptors may mediate the suppressive effect of high doses of ACTH, while other receptor systems mediate the stimulating effect of ACTH. 42 references. (Author abstract modified)

000338 Babbini, M.; Gaiardi, M.; Bartoletti, M. Institute of Pharmacology, University of Bologna, Bologna, Italy **Morphine effects upon discriminated approach and discriminated avoidance in rats: antagonism by naloxone.** Psychopharmacology. 70(1):73-77, 1980.

The effects of various doses of morphine alone or in combination with a constant dose of naloxone were examined in rats trained on a discriminated approach schedule (in which barpressing in the presence of a stimulus light produced food), or on a discriminated avoidance (in which the same response produced stimulus shock termination). Since the performance of rats in the discrimination avoidance varied widely, drug effects were examined separately in groups of good, intermediate or poor performer rats. Comparable patterns of responding in the presence of light were found in the approach group and in the good performer avoidance group. Morphine induced a dose-related decrease of this responding which was identical in both cases. Other effects of morphine were a dose related increase of escape failure in all the avoidance groups and stimulatory or depressant effects upon bar-presses performed during the no light periods. All the effects of morphine were antagonized by naloxone. Data suggest that comparable patterns of responding maintained by different reinforcements can be similarly affected by morphine. 17 references. (Author abstract modified)

000339 Bacotti, Alfred V.; McKearney, James W. Worcester Foundation for Experimental Biology, 222 Maple Ave., Shrewsbury, MA 01545 **Prior and ongoing experience as determinants of the effects of d-amphetamine and chlorpromazine on punished behavior.** Journal of Pharmacology and Experimental Therapeutics. 211(1):80-85, 1979.

The influence of a shock postponement schedule on the subsequent effects of d-amphetamine and chlorpromazine on punished food maintained responding were studied in male squirrel monkeys. Results showed that the effects of d-amphetamine on punished responding varied with past experience under shock postponement schedules, recent experience of drug-induced behavioral changes, and current schedule parameters. The initial rate decreasing effect of chlorpromazine was not altered by experience under shock postponement. (Author abstract modified)

000340 Baggio, G.; Ferrari, F. Institute of Pharmacology, University of Modena, Modena, Italy **Role of brain dopaminergic mechanisms in rodent aggressive behavior: influence of (or -)N-n-**

propyl-norapomorphine on three experimental models. Psychopharmacology. 70(1):63-68, 1980.

The effects of N-n-propyl-norapomorphine (NPA), a dopamine agonist more potent than apomorphine (APO), on three experimental models of aggressive behavior (electrically-induced foot shock aggression in rats; predatory behavior in rats; and isolation-induced aggression in male mice) were investigated. In rats, NPA increased aggression elicited by electrical foot shock but decreased predatory aggression against turtles as well as isolation-induced aggression in male mice. NPA proved more potent than APO in both the foot shock and predatory test. Haloperidol antagonized NPA in the rat foot shock test as well as in the isolated male mouse test. The relevance of stereotyped movements for NPA influence on aggressive behavior is briefly discussed. 29 references. (Author abstract modified)

000341 Balster, Robert L.; Woolverton, William L. Pharmacology Dept., Medical College of Virginia, Virginia Commonwealth University, Richmond, VA 23298 **Continuous-access phencyclidine self-administration by rhesus monkeys leading to physical dependence.** Psychopharmacology. 70(1):5-10, 1980.

The development of physical dependence on phencyclidine (PCP) was studied in a continuous access, self-administration paradigm with five rhesus monkeys. For the first seven sessions, saline was made contingent on responding. For the next 30 sessions, responses produced 0.01mg/kg PCP and for the next 20 sessions, responses produced 0.05mg/kg PCP. Withdrawal signs and symptoms were evaluated every 4 h during the subsequent saline access period. All animals responded for 0.01mg/kg injections at rates higher than their initial saline rates. Response rates decreased but total PCP intake increased during access to the higher dose. The levels of PCP self-administered resulted in severe intoxication. Evidence for development of physical dependence is described. 14 references. (Author abstract modified)

000342 Barrett, Robert J.; White, David K. Psychology Research Laboratory, V.A. Hospital, 1310 24th Ave. South, Nashville, TN 37203 **Reward system depression following chronic amphetamine: antagonism by haloperidol.** Pharmacology Biochemistry and Behavior. 13(4):555-559, 1980.

The effect of d-amphetamine and haloperidol on intracranial self-stimulation of the lateral hypothalamus was studied in male F344 rats. Chronic amphetamine (15mg/kg/day for 7 days) markedly increased the reward threshold for electrical brain stimulation responding and suppressed response rate. This disruption of self-stimulation responding was not observed when 1.0mg/kg haloperidol was given 30 minutes prior to each amphetamine injection. 32 references. (Author abstract modified)

000343 Beck, Sheryl G.; O'Brien, James H. O'Brien: Dept. of Medical Psychology, University of Oregon Health Sciences Center, Portland, OR 97201 **Lethal self-administration of morphine by rats.** Physiology and Behavior. 25(4):559-564, 1980.

The lethal self-administration of morphine by rats prepared for electrophysiological recordings and stimulated electrically in the foreleg during the intravenous injection of morphine is reported. In a study designed to define further the role of conditioned reinforcers during the development of morphine dependence, rats received electrical stimulation of a foreleg paired with intravenous injection of morphine in response to a lever press. Stimulation of the other foreleg was presented randomly. Of 20 experimental rats, 14 self-administered lethal doses of morphine, engaging in rapid lever pressing until respiratory convulsions commenced. The only parameter differentiating rats that overdosed from rats that maintained their morphine input was the pulse duration of the foreleg stimulation. 17 references. (Author abstract modified)

000344 Bedford, John A.; Lovell, D. Karen; Turner, Carlton E.; Elsohly, Mahmoud A.; Wilson, Marvin C. Research Institute of Pharmaceutical Sciences, School of Pharmacy, University of Mississippi, University, MS 38677 **The anorexic and actometric effects of cocaine and two coca extracts.** Pharmacology Biochemistry and Behavior. 13(3):403-408, 1980.

The effects of cocaine and two extracts of the coca leaf were compared using locomotor activity and limited access food consumption paradigms. The three treatments were tested using both i.p. and oral routes of administration. The extracts were prepared by water and chloroform. Cocaine and the chloroform layer produced dose related increases in locomotor activity and dose related decreases in food consumption. The water layer (containing only trace amounts of cocaine) produced no changes in locomotor activity; however, the highest i.p. dose significantly reduced food consumption. Furthermore, two of the doses of the chloroform layer produced significantly greater effects than an equivalent amount of cocaine. These data suggest that plant constituents other than cocaine may contribute to the overall effect achieved by chewing the leaf. 20 references. (Author abstract modified)

000345 Beninger, Richard J.; Mason, Stephen T.; Phillips, Anthony G.; Fibiger, Hans C. Psychology Dept., University of British Columbia, Vancouver, BC, Canada V6T 1W5 **The use of extinction to investigate the nature of neuroleptic-induced avoidance deficits.** Psychopharmacology. 69(1):11-18, 1980.

Male Wistar rats treated with pimozide (lmg/kg i.p.) prior to one way avoidance training escaped readily when shock was presented but failed to acquire the avoidance response to a 10 second tone. Animals trained under pimozide showed gradual acquistion of the avoidance response when subsequently tested under nondrug conditions. Results suggest that the neuroleptic treated animals learned the association of tone with shock, but failed to learn the appropriate motor response during training. The role of dopamine in mechanisms of response learning is discussed. 30 references. (Author abstract modified)

000346 Bhattacharyya, A. K.; Pradhan, S. N. Dept. of Pharmacology, Howard University College of Medicine, Washington, DC 20059 **Inhibition of behavioral effects of cocaine by actinomycin D in rats.** Archives Internationales de Pharmacodynamie et de Therapie. 242(1):86-94, 1979.

Interactions of actinomycin D (AD) with repeated cocaine administration were investigated on the spontaneous motor activity (SMA) and stereotypy (ST) in rats. Following repeated injections of cocaine in combination with saline, both SMA and ST were gradually increased to their peaks on day 9, then decreased up to day 19 and thereafter maintained at higher than normal levels. Given along with cocaine or saline, AD caused gradual and significant decreases of SMA and ST. On stopping AD injection, both SMA and ST increased again. After stopping injection both behaviors were increased to their peaks on day 10, then gradually decreased to and maintained at slightly higher than normal levels on day 18 onwards. The possible mechanisms of actions of AD as an inhibitor of cocaine-induced behavioral effects are discussed. 17 references. (Author abstract modified)

000347 Bjorklund, A.; Dunnett, S. B.; Stenevi, U.; Lewis, M. E.; Iversen, S. D. Dept. of Histology, University of Lund, Lund, Sweden **Reinnervation of the denervated striatum by substantia nigra transplants: functional consequences as revealed by pharmacological and sensorimotor testing.** Brain Research. 199(2):307-333, 1980.

Embryonic substantia nigra (SN) was transplanted to the neostriatum in adult rats subjected to a unilateral or serial bi-

lateral destruction of the nigrostriatal dopamine (DA) pathway, and the survival of the graft and the growth of DA containing fibers from the graft into the host brain was studied by fluorescence histochemistry and microfluorometry. The motor asymmetry and the contraleteral sensory neglect-induced by a unilateral destruction of the nigrostrital DA pathway, were monitored in the transplanted rats and in nontransplanted controls through repeated measurements of the amphetamine and apomorphine-induced rotational behavior, and through analysis of the rats performance in a number of sensorimotor tests. The development of aphagia and adipsisa after a serial bilateral destruction of both nigrostriatal DA pathways were followed in rats bearing bilateral SN transplants and in lesioned nontransplanted controls. It is concluded that SN transplants reinnvervating the dorsal part of the neostriatum are able to replace ihe innate SN in normalizing some aspects of the rats motor behavior, while their sensorimotor deficits and deficits in consummatory behavior were unaffected. It is suggested that this dissociation of transplant-induced recovery is due to the failure of the SN transplants to reinnervate those parts of the neostriatum which are most directly implicated in sensorimotor and consummatory behavior. 40 references. (Author abstract modified)

000348 Bodnar, Richard J.; Kelly, Dennis D.; Thomas, Lucy W.; Mansour, Alfred; Brutus, Martin; Glusman, Murray. Dept. of Psychology, Queens College, CUNY, Flushing, NY 11367 **Chlordiazepoxide antinociception: cross-tolerance with opiates and with stress.** Psychopharmacology. 69(1):107-110, 1980.

Chlordiazepoxide (CDP) increased flinch/jump thresholds in Sprague-Dawley rats, but tolerance to this effect was observed with repeated injections. CDP had no antinociceptive effect in morphine tolerant rats or in rats adapted to cold water swims. Chronic pretreatment with CDP attenuated the antinociceptive effects of cold water stress, but did not produce any clear effect on morphine analgesia. Thus, CDP showed one way cross-tolerance with morphine and two-way partial tolerance with cold water swims. 28 references. (Author abstract modified)

000349 Brady, Linda S.; Holtzman, Stephen G. Dept. of Pharmacology, Emory University School of Medicine, Atlanta, GA 30322 **Schedule-controlled behavior in the morphine-dependent and post-dependent rat.** Psychopharmacology. 70(1):11-18, 1980.

Rats were trained to lever-press on a variable interval schedule of food presentation, and dose response curves were determined for morphine and naloxone in the same group of animals prior to, during, and following morphine dependence. Dependence was induced and maintained by schedule access to 0.05% morphine drinking solution for 10 min every 6 h. Chronic morphine treatment produced a threefold decrease in the effect of morphine and a dramatic increase in the effectiveness of naloxone in decreasing response rate. The altered sensitivity of dependent rats to morphine and naloxone was completely reversed in the postdependent animals, within 4 weeks after the withdrawal of morphine. Scheduled access to a morphine solution is described as affording a simple means of maintaining morphine tolerant and dependent animals for long-term behavioral studies. 34 references. (Author abstract modified)

000350 Branch, Marc N. Dept. of Psychology, University of Florida, Gainesville, FL **Consequent events as determinants of drug effects on schedule-controlled behavior: modification of effects of cocaine and d-amphetamine following chronic amphetamine administration.** Journal of Pharmacology and Experimental Therapeutics. 210(3):354-360, 1979.

The effects of d-amphetamine and cocaine were studied in squirrel monkeys responding on fixed-interval schedules of electric shock presentation, food presentation, or termination of a stimulus associated with periodic electric shock. Initially, d-amphetamine had equally potent effects on all three components. After chronic d-amphetamine administration, tolerance was observed for the food presentation and escape components, but not for the shock presentation component. Consistent cross-tolerance between d-amphetamine and cocaine was not observed. 32 references. (Author abstract modified)

000351 Brewster, David; Dettmar, Peter W.; Lynn, Andrew G.; Metcalf, Geoffrey; Morgan, Barry A.; Rance, Michael J. Pharmaceutical Div., Reckitt and Colman, Dansom Lane, Hull, HU8 7DS, England **Modification of the proline residue of TRH enhances biological activity and inhibits degradation.** European Journal of Pharmacology. 66(1):65-71, 1980.

The biological activities of thyrotropin releasing hormone (TRH), a TRH analogue with a modified proline residue (L-pyroglutamyl-L-histidyl-L-trans-3-methylproline-amide), and the TRH metabolite histidyl-proline-diketopiperazine (His-Pro) were compared in mice, rabbits, and rats. The analogue was more resistant to enzymatic degredation than TRH and showed enhanced potency in tests for CNS activity. Although TRH and its analogue exhibited effects consistent with antidepressant activity, the His-Pro metabolite was inactive in neuropharmacological and endocrine tests. Results suggest that the biological actions attributed to TRH are due to the parent tripeptide rather than the His-Pro metabolite and that these actions can be enhanced by improving the biological stability of TRH. 27 references. (Author abstract modified)

000352 Buresova, O.; Bures, J. Institute of Physiology, Czechoslovak Academy of Sciences, Prague, Czechoslovakia **Post-ingestion interference with brain function prevents attentuation of neophobia in rats.** Behavioural Brain Research. 1(4):299-312, 1980.

The resistance to functional disruption of the memory process mediating the attentuation of neophobic rejection of novel flavors was investigated in rats. Rats maintained on a 24 h water deprivation schedule consumed only 3 ml of the novel apple juice, but doubled intake during the second presentation 2 days later. This attenuation of neophobia (AN) was prevented by pentobarbital administered 0 and 1 h, but not 4 and 7 postingestion. AN was also disrupted by ether anesthesia, hypothermia, bilateral cortical spreading depression, and electroconvulsive shock applied 0 to 1 h, but not 2 or more hours postingestion. Results are consonant with the learned safety hypothesis and indicate that a 2 to 4 h long continuous absence of noxious consequences of food ingestion is required to classify a gustatory stimulus as safe or neutral. Since interventions interfering with AN do not disrupt formation of conditioned taster aversion, the two forms of adaptive control of food selection are obviously mediated by fundamentally different neural mechanisms. 31 references. (Author abstract modified)

000353 Cameron, Dianne B.; Blampied, Neville M. Blampied: Dept. of Psychology, University of Canterbury, Christchurch, New Zealand **Rats' reactions to a predator: modification by chlordiazepoxide.** New Zealand Psychologist. 9(1):9-13, 1980.

The effects of the benzodiazepine, chlordiazepoxide, on rats' reactions when exposed to a predator (a ferret) were studied. Flight and freezing defensive reactions were measured by recording location and time sampled codes of behavior categories. Chlordiazepoxide attenuated reactions to the predator as measured by the location variable, while the behavior observation data showed that the drug enhanced predator-induced immobility, but attenuated frequency of locomotion. This interaction between drug and type of species specific defensive reaction may resolve contradictory findings on effects of chlordiazepoxide on

escape and avoidance of electric shock. 18 references. (Author abstract modified)

000354 Carney, John M.; Balster, Robert L.; Martin, Billy R.; Harris, Louis S. Balster: Box 726, MCV Station, Richmond, VA 23298 **Effects of systemic and intraventricular administration of cannabinoids on schedule-controlled responding in the squirrel monkey.** Journal of Pharmacology and Experimental Therapeutics. 210(3):399-404, 1979.

The effects of several cannabinoids were determined in squirrel monkeys trained to respond on a chain fixed-interval fixed-ratio schedule of food presentation. The descending order of potency was (●)-9-nor-9beta-OH hexyhydrocannabinol, 11-OH-delta9-tetrahydrocannabinol, delta9-tetrahydrocannabinol, cannabinol, and cannabidiol. The order of potency was the same for intraventricular and intraperitoneal administration, but the ratio of potencies for the two routes varied. 25 references. (AUthor abstract modified)

000355 Carruba, Michele O.; Ricciardi, Sante; Mantegazza, Paolo. Dept. of Pharmacology, School of Medicine, University of Milan, via Vanvitelli 32, I-20129 Milan, Italy **Reduction of food intake by piribedil in the rat: relation to dopamine receptor stimulation.** Life Sciences. 27(13):1131-1140, 1980.

The relation of the piribedil-induced reduction of food intake in the rat to dopamine receptor stimulation was investigated. Piribedil, given either intraperitoneally or intracerebroventricularly to rats trained to eat 4 h a day, induced a dose and time-related anorexia. In this context, it was less potent than either amphetamine or fenfluramine. This effect was selectively antagonized by blockade of dopamine (DA) receptors in the CNS, but not by either inhibition of catechomaine synthesis, blockade of alpha-adrenoceptors or beta-adrenoceptors or serotoninergic receptors. Also, a blocker of peripheral DA receptors failed to antagonize piribedil-induced anorexia. Piribedil, as opposed to amphetamine, failed to increase locomotor activity or to induce stereotyped behavior at doses lower than that required to cause an approximate 80% reduction of food intake. These findings indicate that stimulation of central DA receptors involved in feeding regulation is responsible for the anorexigenic effect of piribedil. 40 references. (Author abstract modified)

000356 Cesare, Debra A.; McKearney, James W. McKearney: Worcester Foundation for Experimental Biology, Shrewsbury, MA 01545 **Tolerance to suppressive effects of chlordiazepoxide on operant behavior: lack of cross tolerance to pentobarbital.** Pharmacology Biochemistry and Behavior. 13(4):545-548, 1980.

The effects of chlordiazepoxide (1 to 30mg/kg) and pentobarbital (1 to 17/mg/kg) on fixed-ratio and fixed-interval responding were determined in pigeons before and during chronic exposure to chlordiazepoxide. Daily injections of chlordiazepoxide for 3 weeks in doses that markedly suppressed responding when given acutely (10 or 17mg/kg) caused a threefold or greater shift to the right in the dose/effect curve for chlordiazepoxide. No consistent change in the effect of pentobarbital was observed. 5 references. (Author abstract modified)

000357 Chapman, David B.; Hu, Jean; Way, E. Leong. Dept. of Pharmacology, University of California, San Francisco, CA 94143 **Methionine-enkephalin antagonism and endorphin potentiation of narcotic-induced analgesia.** European Journal of Pharmacology. 65(4):369-377, 1980.

Intracerebroventricular (i.c.v.) pretreatment with subanalgesic doses of beta-endorphin and leucine-endorphin significantly enhanced the analgesic effects of subcutaneous morphine in male ICR mice in the tail-flick assay. A similar effect on levorphanol analgesia was observed, but beta-endorphin did not enhance analgesia induced by leucine-enkephalin or methionine-enkephalin. The endorphins did not alter the development of morphine tolerance and dependence. Leucine-enkephalin had no effect on morphine analgesia, tolerance, or dependence. Low doses of methionine-enkephalin antagonized morphine analgesia without altering the development of tolerance and dependence. Neither enkephalin altered analgesia induced by beta-endorphin. 24 references. (Author abstract modified)

000358 Cheal, MaryLou. Neuropsychology Laboratory, McLean Hospital, Belmont, MA 02178 **Disruption of selective attention by apomorphine, but not amphetamine, in the Mongolian gerbil.** Psychopharmacology. 69(1):93-100, 1980.

In a study of selective attention to a novel stimulus, Mongolian gerbils were exposed to a novel object for 60 seconds following an injection of d-amphetamine (1, 3, or 6mg/kg) or apomorphine (O0.1, 0.3, 1, 3, or 10mg/kg). When tested the next day, animals treated with d-amphetamine showed a decrement in investigation indicative of habituation. The amphetamine treated gerbils showed a gradient of responding that was dependent on the distance the novel object was moved, indicating normal perception of location. Animals treated with 1mg/kg or more of apomorphine showed no habituation on day 2, and this disruption was found to be due to a failure of input rather than retrieval of information. Pretreatment with pimozide blocked the effect of apomorphine on habituation, suggesting the disruption of habituation was mediated by dopamine. 36 references. (Author abstract modified)

000359 Chesher, Gregory B.; Jackson, David M. Dept. of Pharmacology, University of Sydney, N.S.W., Australia 2006 **Post-swim grooming in mice inhibited by dopamine receptor antagonists and by cannabinoids.** Pharmacology Biochemistry and Behavior. 13(3):479-481, 1980.

The effects of dopamine receptor antagonists and cannabinoids on postswim grooming in mice were investigated. After a period of swimming, mice engage in vigorous grooming activity. This behavior is inhibited in a dose dependent manner by dopamine receptor antagonists and by cannabinoids, delta9-tetrahydrocannabinol and cannabinol. Cannabinol was inactive. It is suggested that the postswim grooming behavior involves a dopaminergic mechanism. The mechanism of action of the cannabinoids on this behavior is unknown. 7 references. (Author abstract modified)

000360 Chiu, Simon; Mishra, Ram K. Neuropharmacology Laboratory, Dept. of Psychiatry and Neurosciences, McMaster University Medical Center, Hamilton, Ontario L8N 3Z5, Canada **Effects of dopaminergic and cholinergic drugs, naloxone and L-prolyl-leucyl-glycinamide on LSD-induced catalepsy.** Naunyn-Schmiedeberg's Archives of Pharmacology. 313(1):45-50, 1980.

The effects of dopaminergic, cholinergic, and peptidergic agents on catalepsy induced by d-lysergic acid diethylamide (LSD) was studied in male Sprague-Dawley rats. LSD catalepsy was antagonized by apomorphine and L-dopa, but was slightly prolonged by alpha-methyl-p-tyrosine. Atropine and scopolamine potentiated the cataleptic effects of LSD and intensified the hyperexcitable phase preceding catalepsy. LSD catalepsy was antagonized by pilocarpine and mecamylamine, but slightly potentiated by nicotine. Pretreatment with naloxone or L-propyl-leucyl-glycinamide prolonged the cataleptic response to LSD, but posttreatment with naloxone attenuated the response. 32 references. (Author abstract modified)

000361 Clark, Wesley G.; Ponder, Stephen W. Dept. of Pharmacology, Southwestern Medical School, University of Texas

Health Science Center, Dallas, TX 75235 **Effects of centrally administered pentazocine and ethylketocyclazocine on thermoregulation in the cat.** Brain Research Bulletin. 5(5):615-618, 1980.

The mechanism for the biphasic response of unrestrained cats to centrally administered pentazocine were examined by injecting 1 mg pentazocine into the third cerebral ventricle at various ambient temperatures. The initial phase was hyperthermia at 34 degrees C, but at 22 degrees C hypothermia, which was enhanced at zero degrees C, developed. The second phase was an increase in body temperature that occurred at all three temperatures. No evidence was seen of compensatory thermoregulatory effector activity during development of either phase. The first phase can be attributed to general depression of thermoregulation whereas the second phase is likely due to an increase in the level about which body temperature is regulated. Ethylketocyclazocine caused a very similar, dose related change in temperature, neither phase of which, as reported previously for pentazocine, was reduced by a large dose of naloxone. Thus both agonists appear to act on the same receptors to alter thermoregulation in the cat. These receptors are distinct from the naloxone sensitive receptors stimulated by morphine. 13 references. (Author abstract modified)

000362 Colonna, L.; Petit, M. Service hospitalo-universitaire de Psychiatrie, F-76301 Sotteville-les-Rouen, France **/The stimulant effect of neuroleptics: myth or reality?/** L'effet stimulant des neuroleptiques: mythe ou realite? Encephale. 5(3):239-242, 1979.

The stimulant effect of neuroleptics is discussed on the basis of clinical observations and studies in the field of animal pharmacology. Data suggest that certain types of neuroleptics described as monopolar always have a sedative effect, regardless of the dosage used. Bipolar neuroleptics are assumed to be stimulants when used in small doses and sedatives when used in large doses. The stimulating and sedative effects may be related to presynaptic and postsynaptic blockage of dopaminergic receptors. The possibility that some neuroleptics have a stimulating effect when administered in increased doses suggests that some drugs may have triphasic effects depending on the dosage. 9 references.

000363 Colpaert, Francis C.; Niemegeers, Carlos J. E.; Janssen, Paul A. J. Dept. of Pharmacology, Janssen Pharmaceutica Research Laboratories, B-2340 Beerse, Belgium **Evidence that a preferred substrate for type B monoamine oxidase mediates stimulus properties of MAO inhibitors: a possible role for beta-phenylethylamine in the cocaine cue.** Pharmacology Biochemistry and Behavior. 13(4):513-517, 1980.

In male Wistar rats trained to discriminate 5mg/kg cocaine from saline in a two bar drug discrimination procedure, monoamine oxidase (MAO) inhibitors induced stimulus generalization to cocaine in the following descending rank order of potency: tranylcypromine, pheniprazine, deprenyl, pargyline, nialamine. Clorgyline failed to produce 50% generalization in doses up to 40mg/kg. All six drugs potentiated tryptamine in producing body tremors and clonic seizures; the rank order of potency was tranylcypromine, clorgyline, pheniprazine, pargyline, deprenyl, nialamide. It is suggested that endogenous substances such as beta-phenylethylamine that preferred substrates for type-B MAO in rat brain may affect behavior by virture of cocaine-like stimulus properties. 32 references. (Author abstract modified)

000364 Commissaris, R. L.; Lyness, W. H.; Moore, K. E.; Rech, R. H. Dept. of Pharmacology and Toxicology, Michigan State University, East Lansing, MI 48824 **Enhancement of the behavioral effects of 2,5-dimethoxy-4-methyl-amphetamine (DOM) by pretreatment with p-chlorophenylalanine.** Pharmacology Biochemistry and Behavior. 13(4):605-608, 1980.

The effects of the phenethylamine hallucinogen 2,5-dimethoxy-4-methylamphetamine (DOM) were enhanced by disruption of serotonergic neural activity in male Sprague-Dawley rats. In food deprived animals trained on a fixed ratio 40 schedule of food reinforcement, DOM (0.5mg/kg) caused a cessation of responding (hallucinatory pause) for some portion of the 40 minute test session. Rates of responding were not altered by administration of 100mg/kg p-chlorophenylalanine (PCPA) after each test session on 3 successive days, even though the treatment reduced 5-hydroxytryptamine (5-HT) to 15% to 26% of control concentrations in various brain regions. However, the disruptive effects of 0.5mg/kg DOM were enhanced in rats pretreated with PCPA. 13 references. (Author abstract modified)

000365 Commissaris, R. L.; Moore, K. E.; Rech, R. H. Dept. of Pharmacology and Toxicology, Michigan State University, East Lansing, MI 48824 **Naloxone potentiates the disruptive effects of mescaline on operant responding in the rat.** Pharmacology Biochemistry and Behavior. 13(4):601-603, 1980.

The interaction of mescaline and naloxone was studied in food deprived male Sprague-Dawley rats trained to press a lever on a fixed-ratio 40 operant schedule for food reinforcement. Mescaline (4.0 to 10mg/kg) caused a cessation of responding for some portion of the 40 minute operant session. The duration of this pause" was dose dependent. Naloxone (1.0 to 8.0mg/kg) had no direct effect on responding, but potentiated the disruptive effects of mescaline in a dose dependent manner. 14 references. (Author abstract modified)

000366 Cools, A. R. Dept. of Pharmacology, University of Nijmegen, P.O. Box 9101, 6500 HB Nijmegen, The Netherlands **Role of the neostriatal dopaminergic activity in sequencing and selecting behavioural strategies: facilitation of processes involved in selecting the best strategy in a stressful situation.** Behavioural Brain Research. 1(5):361-378, 1980.

The behavioral effects of drug-induced changes in the neostriatal dopaminergic activity on the degree of intrinsic (self-generated) and extrinsic (externally produced) constraints on the selection of behavioral patterns in rats were studied. Both systemic and neostriatal injections of extremely low doses of apomorphine and haloperidol were used to change the neostriatal dopaminergic activity. Behavioral changes were observed in: 1) an open-field test; 2) a so called swimming without escape test; 3) a so called swimming with escape test, and; 4) a test to detect deficiencies in sensory, motor, and sensorimotor capacities required to perform both swimming tests. Evidence is found that the neostriatum, especially the neostriatal, dopaminergic activity determines the animal's ability to select the best strategy in a stressful situation by modifying the process of switching strategies under pressure of factors intrinsic to the organism: neither sensory neglect nor inability to initiate voluntary movements underly the observed phenomena. It is suggested that the neostriatum determines the individual flexibility to cope with available sensory information. 32 references. (Author abstract modified)

000367 Cooper, Steven J. Dept. of Psychology, University of Birmingham, P.O. Box 363, Birmingham B15 2TT, England **Effects of chlordiazepoxide and diazepam on feeding performance in a food-preference test.** Psychopharmacology. 69(1):73-78, 1980.

Chlordiazepoxide (5 and 10mg/kg) and diazepam (2.5mg/kg) reduced the latency to eat and enhanced feeding responses to familiar food in a food preference test in male Sprague-Dawley rats. The increased feeding response reflected an increased frequency of individual eating episodes with no significant change in episode duration. The drugs' facilitatory effect was not dependent on the presence of principal novelty cues in the food

preference test. A larger dose of diazepam (5mg/kg) enhanced the feeding response to novel food, but the increased choice of novel foods did not appear to be due to a specific reduction in food neophobia. 17 references. (Author abstract modified)

000368 Cooper, Steven J.; Francis, Raymond L. Dept of Psychology, University of Birmingham, Elms Road, Birmingham, B15 2TT, England **Effects of acute or chronic administration of chlordiazepoxide on feeding parameters using two food textures in the rat.** Journal of Pharmacy and Pharmacology. 31(11):743-746, 1979.

Acute administration of chlordiazepoxide resulted in reduced feeding rates in male Sprague-Dawley rats. At low doses (5 or 10mg/kg), the drug tended to prolong feeding duration; at a higher dose (15mg/kg), it reduced the amount of food intake. Feeding parameters were also influenced by food texture, but these effects did not interact with drug effects. Signs of tolerance to the drug's effect on feeding were evident after nine daily injections. It is suggested that the benzodiazepine may reduce the rate of eating by acting on brain serotonin. 18 references. (author abstract modified)

000369 Cooper, Steven J.; Francis, Raymond L. Laboratory of Experimental Psychology, University of Sussex, Brighton, Sussex, BN1 9QG, England **Water intake and time course of drinking after single or repeated chlordiazepoxide injections.** Psychopharmacology. 65(2):191-195, 1979.

Chlordiazepoxide was given to rats either acutely or for 9 consecutive days, and its effects were examined in a 15 minute drinking test in which latency to drink, volume of water consumption, and the time course of drinking were measured. Chlordiazepoxide (10.0mg/kg) produced the strongest stimulant effect on drinking and enhanced the frequency of occurrence of drinking both at the beginning and at the end of the test period. Chlordiazepoxide (15.0mg/kg) delayed the onset of drinking and its peak effect was observed later than for other injection conditions. Single and repeated administration of chlordiazepoxide had the same effects on the measures taken in the test. Initial sedation to the drug treatment and subsequent tolerance to this effect were not, therefore, factors influencing the drug effects observed in this study. Possible mechanisms underlying the stimulation of drinking by chlordiazepoxide are discussed. 15 references. (Author abstract modified)

000370 Costall, Brenda; Fortune, David H.; Naylor, Robert J.; Nohria, Virinder. Postgraduate School of Studies in Pharmacology, University of Bradford, Bradford, BD7 1DP, England **The mesolimbic system, denervation and the climbing response in the mouse.** European Journal of Pharmacology. 66(2/3):207-215, 1980.

In male albino mice pretreated with tranylcypromine and desmethylimipraine (DMI), bilaterial injections of 6-hydroxydopamine (6-OHDA 2mcg) into the nucleus accumbens enhanced climbing responses to apomorphine and 2-(N-N-dipropyl)amino-5,6-dihydroxytetralin. Intraaccumbens 6-OHDA (0.25 to 2mcg) caused dose related decreases in the dopamine (DA) content of the (nucleus accumbens and tuberculum olfactorium without causing significant changes in mesolimbic noradrenaline or striatal DA. In the absence of tranylcypromine and DMI, 6-OHDA (2 and 4mcg) also decreased mesolimbic noradrenaline and striatal DA contents. An injection of 16mcg 6-OHDA in animals pretreated with DMI and tranylcypromie decreased striatal DA content without altering apomorphine-induced climbing. Haloperidol, sulpiride, thioridazine, clozapine, and metoclopramide caused dose dependent decreases in apomorphine-induced climbing in both normal and 6-OHDA treated mice. Sulpiride and thioridazine were about four times more potent in the treated group than in controls. 14 references. (Author abstract modified)

000371 Cruz-Morales, Sara E.; Reid, Larry D. Universidad Nacional Autonoma de Mexico, Mexico, D.F., Mexico **Addictive agents and intracranial stimulation (ICS): morphine, naloxone, and pressing for amygdaloid ICS.** Bulletin of the Psychonomic Society. 16(3):199-200, 1980.

The effects of morphine and nalozone on rats pressing for amygdaloid intracranial stimulation (ICS) were examined. Rats fixed with chronically indwelling bipolar electrodes pressed daily for ICS of the amygdaloid region. After pressing rates stabilized, rats were given morphine 3 hr before a test session. Subsequently, they were given nalozone 15 min before a test session. Morphine increased pressing for ICS and naloxone decreased pressing compared with pressing under placebo. Pressing for amygdaloid ICS is, it is concluded, modified by these opioids in the same way as pressing for a number of other sites of ICS. 11 references. (Author abstract modified)

000372 Davis, Michael; Redmond, D. Eugene, Jr.; Baraban, Jay M. Yale University School of Medicine, 34 Park St., New Haven, CT 06508 **Noradrenergic agonists and antagonists: effects on conditioned fear as measured by the potentiated startle paradigm.** Psychopharmacology. 65(2):111-118, 1979.

Three experiments were conducted on rats to determine whether there is a positive correlation between drugs affecting norepinephrine (NE) transmission and potentiated startle. Clonidine produced a dose dependent reduction of fear as measured by the potentiated startle effect (increased acoustic startle in the presence of a cue which had been previously paired with shock). The reduction of potentiated startle could not be accounted for entirely by a general depressant effect of clonidine on startle or by an acceleration of extinction. Piperoxane and yohimbine, which are associated with anxiety in humans, increased potentiated startle, whereas propranolol and WB-4101 did not. Results provide further evidence that the potentiated startle paradigm in the rat is sensitive to drugs that alter anxiety in humans. Moreover, results support the hypothesis that NE transmission is important for the expression of fear or anxiety. 45 references. (Author abstract modified)

000373 Deakin, J. F. W. National Institute for Medical Research, Mill Hill, London, England NW7 1AA **On the neurochemical basis of self-stimulation with midbrain raphe electrode placements.** Pharmacology Biochemistry and Behavior. 13(4):525-530, 1980.

Bar-passing for electrical stimulation of the median raphe nucleus in rats was not attenuated by 5-hydroxytryptamine (5-HT) receptor blockade with metergoline or cyproheptadine, by 5-HT depletion with parachloroamphetamine, or by destruction of ascending 5-HT pathways with intracerebral microinjections of 5,7-dihydroxytryptamine. In a shuttlebox paradigm in which rats could initiate and terminate stimulation, parachlorophenylalanine did not antagonize initiation of stimulation. In contrast, the depletion of catecholamines by alpha-methylparatyrosine had an inhibitory effect on initiation behavior without impairing termination of stimulation. Results suggest that the rewarding component of raphe stimulation is mediated by catecholamines rather than by 5-HT. 27 references. (Author abstract modified)

000374 Delashaw, John B., Jr.; Foutz, Arthur S.; Guilleminault, Christian; Dement, William C. Foutz: Sleep Disorders Research Center, Stanford University School of Medicine, Stanford, CA 94305 **Cholinergic mechanisms and cataplexy in dogs.** Experimental Neurology. 66(3):745-757, 1979.

Food elicited cataplexy in narcoleptic dogs was significantly increased by the anticholinesterase physostigmine salicylate and the muscarinic cholinomimetic arecoline hydrochloride. Two muscarinic blockers, atropine sulfate and scopolamine hydrobromide, significantly reduced the amount of cataplexy. Neostigmine, atropine methylnitrate, scopolamine methylnitrate, nicotine, and mecamylamine were ineffective. Results suggest that central muscarinic cholinergic receptors are involved in the mechanisms that produce that motor inhibition of cataplexy. 39 references. (Author abstract modified)

000375 Denenberg, Victor H.; Hofmann, Michael; Garbanati, James A.; Sherman, Gordon F.; Rosen, Glenn D.; Yutzey, David A. Dept. of Biobehavioral Sciences, University of Connecticut, Storrs, CT 06268 **Handling in infancy, taste aversion, and brain laterality in rats.** Brain Research. 200(1):123-133, 1980.

The effects of handling in infancy and the influence of brain laterality on retention of a lithium chloride (LiCl) conditioned taste aversion were investigated. Groups of rats were handled or not for the first 20 days of life; injected with LiCl to produce a conditioned taste aversion or injected with saline, and were subjected to removal of the right or left neocortex, sham surgery, or no surgery. Postoperatively, they were tested for retention of taste aversion. Results indicate: 1) that the rat's brain is lateralized, with the right hemisphere being preferentially involved in conditioned emotional behavior; and 2) that handling in infancy makes the left hemisphere less susceptible to conditioned fear. 22 references. (Author abstract modified)

000376 DeRyck, Marc; Schallert, Timothy; Teitelbaum, Philip. University of Illinois at Urbana-Champaign, Dept. of Psychology, Champaign, IL 61820 **Morphine versus haloperidol catalepsy in the rat: a behavioral analysis of postural support mechanisms.** Brain Research. 201(1):143-172, 1980.

A behavioral analysis of postural support mechanisms underlying morphine and haloperidol-induced catalepsy in the rat is presented. Morphine and haloperidol produce two distinct and contrasting behavioral states, which can be thought of as exaggerated, isolated, and simplified forms of organized adaptive behavioral states functioning as components of normal motivated behavior. Haloperidol catalepsy constitutes an organized state in which tonic reactions subserving the maintenance of stable static equilibrium prevail, at the expense of phasic locomotor reactions. In contrast, morphine produces an immobility state characterized by inhibition of the postural support subsystems, and compatible with or preparatory to locomotor rather than static postural reactions. 100 references. (Author abstract modified)

000377 Doyle, R. L.; Sellinger, O. Z. Laboratory of Neurochemistry, Mental Health Research Institute, University of Michigan, Ann Arbor, MI 48109 **Differences in activity in cerebral methyltransferases and monoamine oxidases between audiogenic seizure susceptible and resistant mice and deermice.** Pharmacology Biochemistry and Behavior. 13(4):589-591, 1980.

The specific activity of cerebral histamine N-methyltransferase (HMT) in audiogenic seizure susceptible (SS) 21-day-old DBA/2J mice was significantly lower than that of nonsusceptible 70-day-old DBA/2J mice, but did not differ significantly from that of seizure resistant (SR) 21-day-old C57Bl/6J mce. There was not significant difference between the two strains at 70 days of age. HMT specific activity was also reduced in an animal. Cerebral catechol-0-methyltransferase activity was reduced in the SR deermouse compared to the SS mutant and in the DBA/2J mouse compared to the C57Bl/6J mouse. Type-B monoamine oxidase activity was lower in 21-day-old DBA/2J mice than in 70-day-old DBA/2J mice or 21-day-old C57Bl/6J mice. 22 references. (Author abstract modified)

000378 Drago, Filippo; Canonico, Pier Luigi; Bitetti, Rocco; Scapagnini, Umberto. Dept. of Pharmacology, University of Catania Medical School, Catania, Italy **Systemic and intraventricular prolactin induces excessive grooming.** European Journal of Pharmacology. 65(4):457-458, 1980.

Endogenous hyperprolactinemia in male Wistar rats was associated with excessive grooming, which could be suppressed by systemic administration of 0.5mg/kg haloperidol. Systemic injection of haloperidol also reduced the excessive grooming induced by intraventricular injection of prolactin. Results suggest that the dopaminergic nigrostriatal system is involved in prolactin-induced grooming behavior. 5 references.

000379 Dykstra, Linda A. Dept. of Psychology 013-A, University of North Carolina, Chapel Hill, NC 27514 **Nalorphine's effect under several schedules of electric shock titration.** Psychopharmacology. 70(1):69-72, 1980.

The effects of nalorphine were examined under a shock titration procedure in which squirrel monkeys received shock during 15 sec shock periods. If the monkey did not make five responses during the 15 sec shock period, the shock was increased by one increment and maintained for another 15 sec period. If five responses were made during the 15 sec shock period, the shock was immediately terminated for 15 sec during which the chamber was dark (timeout). After the 15 sec timeout period, the shock resumed at the next lower intensity. Three schedules of shock increment were examined in which shock increased from 0 to either 1.0, 2.0, or 5.5mA. Under all three schedules of shock increment nalorphine decreased median shock levels and increased rates of responding in the presence of shock and in the absence of shock (i.e., during timeout). These effects were apparent during hour 1 of the session. Responding during hours 2 and 3 of the session was unchanged. 18 references. (Author abstract modified)

000380 Emmett-Oglesby, M. W.; Taylor, K. E.; Dafter, R. E. Dept. of Pharmacology, Texas College of Osteopathic Medicine, Fort Worth, TX 76107 **Differential effects of methylphenidate on signalled and non-signalled reinforcement.** Pharmacology Biochemistry and Behavior. 13(3):467-470, 1980.

The differential effects of methylphenidate on signalled and nonsignalled reinforcement were investigated. Rats were trained to press a bar with water reinforcement under a variable interval 15 sec (VI 15), variable interval 15 sec signalled reinforcement (VI SD), or a differential reinforcement of low rate 10 sec (DRL 10) schedule. Methylphenidate (MP) had little effect on response rates or reinforcements earned in the VI 15 group. However, MP increased response rates in a dose related manner in the VI SD and the DRL 10 groups. These findings and additional results reported in the literature suggest that signalled reinforcement does not necessarily antagonize the rate increasing effects of the amphetamine type drugs. 14 references. (Author abstract modified)

000381 Ferraro, Douglas P. University of New Mexico, Albuquerque, NM 87131 **Behavioral phamacology and the stimulus control of behavior.** Revista Mexicana de Analisis de la Conducta. 5(2):131-143, 1979.

The interaction between the stimulus control of behavior and drug effects was studied using discrimination and generalization procedures and several doses of delta9-THC. Results indicate that the drug impaired the acquisition of a discrimination in rats, in a dose related manner, and disruption was caused by a drug produced increase in inhibitory responding. Complex discriminations were more affected than simple ones with monkey Ss. Discriminations based on internal (response produced stimuli) were affected differently than discriminations based on external stim-

uli, and the drug did not affect stimulus control as assessed through the process of stimulus generalization. 23 references. (Author abstract modified)

000382 Filibeck, Umberto; Castellano, Claudio. Istituto di Psicobiologia e Psicofarmacologia 1, via Reno, I-00198 Rome, Italy **Strain dependent effects of ketamine on locomotor activity and antinociception in mice.** Pharmacology Biochemistry and Behavior. 13(3):443-447, 1980.

The effects of ketamine on locomotor activity and response to nociceptive stimuli were investigated in the inbred strains of mice: BALB/c, C57BL/6 and DBA/2. In the BALB/c and in the C57BL/6 mice, ketamine exerted activity stimulating effects which were present at doses lower than those inducing antinociception. Locomotor depressant effects were evident in the DBA/2 mice following the administration of doses higher than those necessary to induce analgesia. It is suggested that: 1) ketamine affects locomotor activity and response to painful stimuli through different mechanisms; and 2) the brain regional and biochemical differences reported for the strains considered may account for their different responses to ketamine administration. 20 references. (Author abstract modified)

000383 Fink, J. Stephen; Smith, Gerard P. Smith: Dept. of Psychiatry, Cornell University Medical College, New York, NY **Mesolimbicocortical dopamine terminal fields are necessary for normal locomotor and investigatory exploration in rats.** Brain Research. 199(2):359-384, 1980.

The role of mesolimbicocortical dopamine terminal fields in normal locomotor and investigatory exploration in rats was investigated. Rats were found to explore a novel open-field or novel object less after denervation of mesolimbicocortical dopaminergic terminal fields produced by bilateral 6-hydroxydopamine (6-OHDA) microinjections into the anterolateral hypothalamus after pretreatment with desmethylimipramine (DMI). These behavioral deficits were correlated with complete or nearly complete loss of fluorescent dopaminergic terminals in the nucleus accumbens, olfactory tubercle, dorsal bed nucleus of the stria terminalis, lateral septal nucleus and the deep layers of the frontal and piriform cortices. Systemic administration of apomorphine, but not clonidine to the 6-OHDA DMI rats repaired the deficits in exploration of a novel open-field or novel object. It is concluded that mesolimbicocortical dopaminergic terminals are necessary for normal exploratory behavior in rats and that dopamine released by these terminals may facilitate optimal sensorimotor integration in these terminal fields during spontaneous exploratory behavior. 27 references. (Author abstract modified)

000384 Fink, J. Stephen; Smith, Gerard P. Smith: E. W. Bourne Lab., New York Hospital/Cornell Medical Center, 21 Bloomingdale Road, White Plains, NY 10605 **Relationships between selective denervation of dopamine terminal fields in the anterior forebrain and behavioral responses to amphetamine and apomorphine.** Brain Research. 201(1):107-127, 1980.

To investigate the relationship between denervation of dopamine (DA) terminal fields in the anterior forebrain and the behavioral responses to amphetamine and apomorphine, 6-hydroxydopmaine (6-OHDA) was injected bilaterally into the anterolateral hypothalamus (ALH) or into specific mesolimbic and anterior striatal terminal fields after pretreatment with desmethylimipramine to protect noradrenergic axons and terminals from 6-OHDA toxicity. When nearly all of the mesolimbicocortical and anteroventral striatal DA terminal fields were denervated by bilateral ALH 6-OHDA, the locomotor reponse to amphetamine was abolished, and the locomotor and stereotyped sniffing responses to apomorphine were increased. When fewer DA terminal fields were denervated, different results were obtained. Results suggest a mass action relationship between DA terminal fields in the anterior forebrain and the locomotor response to amphetamine. The relationship between the same DA lesions and responses to apomorphine appears to be more complex. 28 references. (Author abstract modified)

000385 Flint, Bryan A.; Ho, Ing K. Ho: Dept. of Pharmacology and Toxicology, University of Mississippi Medical Center, Jackson MS 39216 **Assessment of tolerance to and physical dependence on pentobarbital, induced by multiple pellet implantation.** European Journal of Pharmacology. 65(4):355-363, 1980.

Marked tolerance and dependence were observed in male ICR mice implanted with pentobarbital pellets for 3 (one 75mg/kg pellet), 6 (two pellets), or 9 (three pellets) days. Significant tolerance to a 75mg i.p. challenge dose of sodium pentobarbital was observed in all three groups 0, 24, and 48 hours after removal of the pellets. Sleeping time after an i.p. challenge dose of pentobarbital was significantly decreased in mice implanted with three pellets for 9 days, compared to the 3 day group. Narcosis was significantly decreased in the 6 and 9 day groups following intracerebral injection of sodium pentobarbital. Pentylenetetrazol-induced convulsions were more frequent in the 6 and 9 day groups than in the 3 day group. Hepatic microsomal activity was fully induced by 3 days of pellet implantation; 48 hours after pellet removal, hepatic microsomal activity was higher in the 3 day group than in the 6 and 9 day groups. 24 references. (Author abstract modified)

000386 Ford, Robert D.; Rech, Richard H.; Commissaris, Randall L.; Meyer, Linda Y. Rech: Dept. of Pharmacology and Toxicology, Michigan State University, East Lansing, MI 48824 **Effects of acute and chronic interactions of diazepam and d-amphetamine on punished behavior of rats.** Psychopharmacology. 65(2):197-204, 1979.

The effects of acute and chronic interactions of diazepam and d-amphetamine on punished behavior in rats were investigated. Drinking of water deprived rats was punished by delivery of either 0.03 or 0.1 mA shocks through the drinking tube during the last 5 seconds of 7 second tone components during a 15 minute daily exposure to water. These sessions consisted of 66 alternating components marked by the presence or absence of a tone. Drinking was not punished during the 33 components without tones or during the first 2 seconds of each tone. The baseline number of shocks accepted by the rats at 0.1 mA was less than half that at 0.03 mA. Acute diazepam markedly increased shocks delivered from the baseline values for both shock intensities, while acute d-amphetamine either had no effect or decreased the number of shocks accepted. The combination of acute diazepam and d-amphetamine caused a decrease in shock rates as compared to diazepam alone. Daily treatment with the combination of 10mg/kg diazepam and 1mg/kg d-amphetamine caused a gradual increase in punished responding over 25 days under either shock intensity. Gross observation of these rats after daily treatments indicated the development of hyperreactivity and a pattern resembling stereotyped behavior. At the end of the chronic treatment with the drug combination, the shock rates were significantly greater than those caused by diazepam alone. Nevertheless, neither the effect of diazepman nor that of d-amphetamine, when administered singly after the period of chronic treatment with the combination, differed significantly from initial effect of the respective drugs on punished responding. 33 references. (Author abstract modified)

000387 Franklin, K. B. J.; Robertson, A. Dept. of Psychology, McGill University, 1205 Docteur Penfield Ave., Montreal, Quebec, Canada, H3A 1B1 **5HT blockade and the stimulant effects of D- and L-amphetamine: no interaction in self-stimulation**

of prefrontal cortex, hypothalamus, or dorsal tegmentum. Unexpected lethality in hippocampal sites. Pharmacology Biochemistry and Behavior. 13(3):365-370, 1980.

The role of serotonin in the differential stimulatory effects of d-amphetamine and l-amphetamine on locomotor activity and on self-stimulation (SS) was investigated in rats. The serotonin antagonist methysergide had no effects alone on activity or on SS. Methysergide enhanced the strong locomotor stimulatory effects of d-amphetamine and the weaker effects of l-amphetamine, d-amphetamine facilitated SS more strongly than l-amphetamine in hypothalamic, dorsal tegmental, hippocampal and medial prefrontal cortical sites, but the effects of d-amphetamine were much weaker in prefrontal cortex than in other sites. Methysergide did not alter the effects of d-amphetamine or l-amphetamine in any site except the hippocampus. Here, methysergide plus l-amphetamine suppressed SS; methysergide plus d-amphetamine suppressed SS in some rats and greatly increased it in others. When SS was facilitated by d-amphetamine plus methysergide, the combination was lethal. The possiblity that lethality is due to adrenal crisis is discussed. 41 references. (Author abstract modified)

000388 Fulton, Thomas R.; Triano, Teresa; Rabe, Ausma; Loo, Yen Hoong. New York State Institute for Basic Research in Mental Retardation, 1050 Forest Hill Road, Staten Island, NY 10314 **Phenylacetate and the enduring behavioral deficit in experimental phenylketonuria.** Life Sciences. 27(14):1271-1281, 1980.

The behavioral effects of phenylacetate and other major metabolites of phenylalanine were investigated in rats. Phenylacetate, a metabolite derived from phenylalanine, is clearly associated with brain dysfunction in simulated phenylketonuria. Injections of phenylacetate, phenylethylamine, or p-chlorophenylalanine plus L-phenylalanine, all yielding similar concentrations of phenylacetate in the rat brain during postnatal development, induced similar behavioral deficits (hypoactivity in an open-field and poor performance in both a water maze and shuttle box). In contrast, animals treated with the other major metabolites of phenylalanine, phenylpyruvate, phenyllactate, and mandelate, during the same developmental period displayed normal behavior. 34 references. (Author abstract modified)

000389 Fusek, J.; Herink, J.; Koupilova, M.; Patocka, J.; Bajgar, J.; Hrdina, V. Purkyne Medical Research Institute, 502 60 Hradec Kralove, Czechoslovakia **The interaction of anticholinesterases and diazepam in the treatment of anticholinergic syndrome in dogs.** Activitas Nervosa Superior. 21(3):183-184, 1979.

The therapeutic efficacy of diazepam alone was compared with that of diazepam plus the antichlolinesterase tacrine and its derivatives in the treatment of 3-quinuclidyl benzilate (QB) induced anticholinergic syndrome in dogs. Autonomic, motor, and central functions of five dogs were assessed using a 22 item rating scale. It was found that QB intoxication in dogs proceeds very quickly and that the duration of symptoms was 12 to 24 hours. The anticholinergic effect of the combination of diazepam and tacrine and/or its derivatives was not significantly different from the effect of tacrine and/or its derivatives alone. However, diazepam significantly shortened duration of motor symptoms of anticholinergic syndrome. 4 references.

000390 Gage, Fred H.; Valdes, James J.; Thompson, Roy G. Chemistry of Behavior Program, Texas Christian Univ., Forth Worth, TX 76129 **Morphine injections into the periaqueductal-periventricular gray attenuate septal hyperreactivity.** Psychopharmacology. 70(1):113-114, 1980.

The effects of morphine injected into the periaqueductal/periventricular gray matter on septal lesion-induced hyperreactivity were investigated in rats. Rats were tested 2 days preoperatively for reactivity to nonnoxious somatosensory stimulation on a behavioral test battery. Rat gross motor coordination was assessed by rating their climbing ability on the cage climbing task. On the first day following either bilateral radio frequency septal lesions or sham lesions, the rats' behavior was tested again. Both doses of morphine transiently attenuated the reactivity. Naloxone injected .ip. significantly antagonized the morphine attenuation of the septal lesion-induced reactivity. 7 references. (Author abstract modified)

000391 Gellert, Vance F.; Holtzman, Stephen G. Holtzman: Dept. of Pharmacology, Emory University School of Medicine, Atlanta, GA 30322 **Discriminative stimulus effects of naltrexone in the morphine-dependent rat.** Journal of Pharmacology and Experimental Therapeutics. 211(3):596-605, 1979.

Morphine dependent male Sprague-Dawley rats were trained to discriminate between subcutaneous injections of saline and 0.1mg/kg naltrexone in a discrete trial avoidance procedure. Stimulus control by naltrexone was antagonized by morphine in a dose dependent manner; this morphine antagonism was in turn reversed by a tenfold increase in the naltrexone dose. The naltrexone-induced discriminative stimuli appeared to be related to precipitated morphine withdrawal phenomena; following abrupt withdrawal of morphine, the amount and time course of naltrexone appropriate responding were directly related to the degree of physical dependence. 48 references. (Author abstract modified)

000392 Gill, John H.; Horn, Kris M.; Nielson, Harold C. Dept. of Psychology, University of Utah, Salt Lake City, UT **A state-dependent failure of rats to maximize rewards.** Physiology and Behavior. 25(4):505-510, 1980.

A state dependent failure of rats to maximize rewards is reported. Rats were trained to press one lever for continuous reinforcement (CRF) while drugged (sodium pentobarbital) or not drugged and an adjacent lever on a fixed ratio (FR8) while in the opposite drugged or nondrugged state. During testing, when both levers became accessible together for the first time, rats continued to press the same levers they had pressed while drugged or not drugged during training; they did not shift to the other lever they also had learned to press which could have allowed them to maximize rewards. Following drug reversal the next day, rats that had pressed for CRF the previous day switched to FR8 and also failed to maximize rewards. Results are discussed in terms of a sensory neglect interpretation of state dependent effects. 20 references. (Author abstract modified)

000393 Glassman, Robert B.; Glassman, Harriet N. Dept. of Psychology, Lake Forest College, Lake Forest, IL 60045 **Oral dyskinesia in brain-damaged rats withdrawn from a neuroleptic: implication for models of tardive dyskinesia.** Psychopharmacology. 69(1):19-25, 1980.

The behavior of albino rats with ablations of the frontal sensorimotor cortex or damaged sensorimotor connections to the forebrain was compared with that of intact or occipitally lesioned controls after withdrawal from chronic (6 week) treatment with chlorpromazine. Vacuous chewing movements were more commonly observed in rats with sensorimotor damage than in the other two groups, and this effect was still evident 1 month after drug withdrawal. The effects of amphetamine, apomorphine and haloperidol were also studied in these animals. Results are interpreted in terms of a Jacksonian model of levels of brain organization, which may be applicable to tardive dyskinesia induced by long-term neuroleptic therapy in schizophrenic patients. 31 references. (Author abstract modified)

000394 Gouvier, W. D.; Sewell, W. R.; Yehle, A. L. Dept. of Psychology, Memphis State University, Memphis, TN 38152

Delta9-THC in pigeons: a replication and extension. Journal of General Psychology. 103(Second Half):305-306, 1980.

Previous research which demonstrated that delta9-tetrahydrocannabinol (delta9-THC) has a differential effect on pigeons of the White King and Silver King strains was replicated and extended. The results indicate that the minimum effective dosage of the drug is lower for Silver Kings than for White Kings. They support the importance placed on species and strain differences in analyzing learning and performance phenomena and strongly argue against the practice of using mixed strains of pigeons in experimental practice. 3 references.

000395 Griffiths, Roland R.; Bradford, L. DiAnne; Brady, Joseph V. Dept. of Psychiatry and Behavioral Sciences, Johns Hopkins University School of Medicine, Baltimore, MD 21205 **Progressive ratio and fixed ratio schedules of cocaine-maintained responding in baboons.** Psychopharmacology. 65(2):125-136, 1979.

Responding maintained under progressive ratio (PR) and fixed-ratio (FR) schedules of i.v. saline or cocaine injections was studied in baboons. Each injection was followed by a time-out period which was 3 hr with the PR schedule and was either 3 or 12 hr with the FR schedule. On the PR schedule the ration requirement was systematically increased each day until reaching the breaking point., at which self-injection performance fell below a criterion level (one or zero injections per day). Overall response rates on the PR schedule increased with progressive increases in the ratio until a maximum at which an abrupt reduction in responding occurred. With the 3 hr time-out the dose breaking point function on the PR schedule was similar to the dose response rate function on the FR schedule. These dose effect functions were inverted U-shaped curves characterized by a graded ascending limb and a downturn at the highest doses. On the FR schedule the downturn in the dose response rate function was attributable to a cumulative drug effect as revealed by manipulation of time-out duration and analysis of sequential interresponse time distributions and cumulative response records. PR and FR schedules provided similar information about the relative reinforcing efficacy of different cocaine doses. 32 references. (Author abstract modified)

000396 Grijalva, Carlos V.; Novin, Donald; Cooper, Peter H. Dept. of Psychology, University of California, Los Angeles, CA 90024 **Facilitation of recovery by propantheline bromide after lateral hypothalamic damage.** Brain Research Bulletin. 5(5):525-529, 1980.

The facilitation by propantheline, a peripherally acting anticholinergic drug, of functional recovery of feeding behaviors following lateral hypothalamus (LH) damage is described. Following LH lesions, rats pretreated with propantheline bromide ate significantly sooner and at higher bodyweights than saline pretreated control Ss. Results cannot be accounted for by the widely held explanations of an alteration in bodyweight set point, or the occurrence of denervation supersensitivity or regeneration of damaged neural processes. Therefore, it is suggested that propantheline most likely facilitates functional recovery of ingestive behaviors by acting as a prophylaxis against the viscero/metabolic disorders typically induced by LH damage. 28 references. (Author abstract modified)

000397 Guidotti, A.; Baraldi, M.; Leon, A.; Costa, E. Laboratory of Preclinical Pharmacology, NIMH, St. Elizabeths Hospital, Washington, DC 20032 **Benzodiazepines: a tool to explore the biochemical and neurophysiological basis of anxiety.** Federation Proceedings. 39(12):3039-3042, 1980.

The pharmacological and biochemical research literature which indicates that benzodiazepines express a facilitation of neuronal transmission mediated by GABA is reviewed, and the mechanism of the anxiolytic effect of benzodiazepines is discussed. It is contended that in the brain, benzodiazepine recognition sites are part of a supramolecular entity, the GABAreceptor regulator unit, which includes high and low GABA recognition sites and C1-ionophore along with one or more modulatory factors for the regulation of high affinity recognition sites of GABA. The use of benzodiazepines as tools in neuropharmacological studies has helped to elucidate the details of the supramolecular nature of the GABA receptor regulator unit and also to correlate restrict alterations of the GABAergic system with behavioral responses in several animal models. It is hypothesized that the interaction between benzodiazepines and GABA receptors is effective in the mediation of the anticonflict action of benzodiazepines. 25 references.

000398 Guisado, Esperanza; Fernandez-Tome, Paz; Garzon, Javier; Del Rio, Joaquin. Del Rio: Dept. of Pharmacology, Institute of Medicinal Chemistry, CSIC c/Juan de la Cierva 3, Madrid-6, Spain **Increased dopamine receptor binding in the striatum of rats after long-term isolation.** European Journal of Pharmacology. 65(4):463-464, 1980.

Domapine receptor activity was studied in male Wistar rats reared in isolation for 12 to 15 months and in group housed animals. The binding of tritiated spiroperidol to striatal homogenates revealed no differences in receptor affinities between the two groups. However, the number of binding sites was significantly elevated in the animals reared in isolation. This increase in the number of striatal binding sites may account for the increased motor activity and the supersensitivity to dopaminergic stimulants observed in the isolated animals. 5 references.

000399 Hacksell, Uli; Svensson, Uno; Nilsson, J. Lars G.; Hjorth, Stephan; Carlsson, Arvid; Wikstrom, Hakan; Lindberg, Per; Sanchez, Domingo. Dept. of Organic Pharmaceutical Chemistry, Biomedical Center, University of Uppsala, S-751 23 Uppsala, Sweden **N-alkylated 2-aminotetralins: central dopamine-receptor stimulating activity.** Journal of Medicinal Chemistry. 22(12):1469-1475, 1979.

A series of N-alkyl and N,N-dialkyl substituted 2-amino-5-hydroxytetralins and 2-amino-5-methoxytetralins were synthesized and evaluated for central dopaminergic activity in male Sprague-Dawley rats. Results indicate that an n-propyl group on the nitrogen is optimal for activity; the corresponding N-ethyl-substituted compounds were slightly less active, and those lacking N-ethyl or N-propyl groups were almost inactive. Active compounds showed similar activities in the limbic system and striatum. None of the compounds exhibited central noradrenaline or serotonin receptor stimulating activity. 22 references. (Author abstract modified)

000400 Hahn, Elliot F.; Fishman, Jack. Rockefeller University, 1230 York Ave., New York, NY 10021 **Changes in brain N-demethylation and opiate receptor content correlate with analgesic effectiveness of morphine.** Research Communications in Chemical Pathology and Pharmacology. 29(1):197-200, 1980.

The analgesic effectiveness of morphine in male CD rats was enhanced by castration. This effect was abolished by testosterone replacement. The enhanced effectiveness of morphine in castrated rats was correlated with increases in brain N-demethylation and opiate receptor content rather than changes in liver metabolism. 11 references. (Author abstract modified)

000401 Harrison-Read, P. E.; Steinberg, Hannah. Dept. of Pharmacology, Medical College of St. Bartholomew's Hospital, Charterhouse Square, EC1M 6BQ London, England **Tricyclic antidepressant drugs and individual differences in the exploratory**

activity of rats: contrasting effects of tertiary and secondary amine compounds. Psychopharmacology. 69(1):85-91, 1980.

The effects of tricyclic antidepressant drugs (TAD) on individual differences in exploratory activity in a Y-maze were studied in female hooded Lister rats. Positive test/retest correlations were found for activity in control rats tested on two occasions, 1 week apart. Positive test/retest correlations for maze arm entries and rearings were abolished by 6 day treatment with imipramine or a single dose of protriptyline. Chlorimipramine had no consistent effect on test/retest correlations. Since the drug-induced changes were not accompanied by marked shifts in mean activity scores, it is concluded that the TAD have an effect on factors responsible for interindividual differences in behavior. Results are discussed in relation to the therapeutic effects of the TAD in humans. 16 references. (Author abstract modified)

000402 Harston, Craig T.; Spirtes, Morris A.; Dunlap, William P.; Coy, David H. Dept. of Pharmacology, College of Medicine, P. O. Box 19, 810A, East Tennessee State University, Johnson City, TN 37601 **Naloxone-reversible effects of d-Ala2-Met5-enkephalinamide-induced behavioral activity in rats.** Behavioral and Neural Biology. 30(1):1-19, 1980.

The naloxone reversible behavioral effects of d-Ala2-Met5-enkephalinamide (ENK) in rats were investigated among cannulated animals receiving intracerebroventricular ENK injections and their pair matched controls. Quadrant crossing, rearing, and photocell interruptions of the ENK groups decreased initially, but later increased above control levels. Grooming decreased with all doses and head movement decreased with the two highest doses of ENK. Wet dog shakes were observed for all ENK groups. Naloxone was found to reduce the activity of both ENK injected and control Ss. During successive daily injections, the activity of the ENK treated rats was found to increase over successive days, suggesting that the increased activity is due to the direct effects of ENK, and that some naturally occurring activity may involve endorphins. 45 references. (Author abstract modified)

000403 Healey, Margaret L.; Dykstra, Linda A. Psychiatry Research Unit, Box 392 MAYO, University of Minnesota, Minneapolis, MN 55455 **Joint effects of d-amphetamine and ethanol or pentobarbital in pigeons.** Pharmacology Biochemistry and Behavior. 13(3):349-357, 1980.

Ethanol and amphetamine drug interactions were examined in pigeons keypecking under a multiple fixed ratio 30 response, fixed interval 5 minute (mult FR 30, FI 15) schedule of food presentation. Low to intermediate doses of d-amphetamine attenuated the rate decreasing effect of ethanol under both components of the multiple schedule; however, these same doses of d-amphetamine seldom attenuated the rate decreasing effect of pentobarbital. Increases in rates of responding produced by ethanol or pentobarbital under FI components were often enhanced following low to intermediate doses of d-amphetamine. Higher doses of d-amphetamine generally enhanced the rate decreasing effects produced by either ethanol or pentobarbital alone. Results indicate that the joint effects of two drugs cannot be predicted from a knowledge of either their individual or their rate dependent effects. 26 references. (Author abstract modified)

000404 Heikkila, Richard E.; Cabbat, Felicitas S.; Manzino, Lawrence; Duvoisin, Roger C. Rutgers Medical School, Dept. of Neurology, Piscataway, NY 08854 **Rotational behavior induced by cocaine analogs in rats with unilateral 6-hydroxydopamine lesions of the substantia nigra: dependence upon dopamine uptake inhibition.** Journal of Pharmacology and Experimental Therapeutics. 211(1):189-194, 1979.

The cocaine analogs Win-35,428 and Win-35,065 caused a dose dependent inhibition of (3H)dopamine uptake into male Sprague-Dawley rat neostriatal slices, of (3H)norepinephrine uptake into occipital cortex slices, and of (3H)serotonin uptake into whole brain tissue slices. Both drugs were much weaker in releasing previously accumulated biogenic amines. The two drugs caused ipsilateral rotational behavior in rats with unilateral 6-hydroxydopamine lesions of the substantia nigra and caused increases in mouse locmotor activity that could be blocked by haloperidol. Results suggest that the behavioral effects of the two analogs reflect blockade of uptake of synaptically released dopamine. (Author abstract modified)

000405 Hilakivi, Ilkka; Leppavuori, Antero; Putkonen, Pekka T. S. Dept. of Physiology, University of Helsinki, Siltavuorenpenger 20 J, SF 00170 Helsinki 17, Finland **Prazosin increases paradoxical sleep.** European Journal of Pharmacology. 65(4):417-420, 1980.

Prazosin (0.5 and 1.0mg/kg i.p.) induced a prompt and enduring increase in paradoxical sleep in cats. After a 10mg/kg dose, paradoxical sleep was initially inhibited but returned to control levels in 16 hours. Together with previous findings, these results suggest that selective, moderate blockade of alpha1-receptors facilitates paradoxical sleep. 10 references. (Author abstract modified)

000406 Hill, Shirley Y.; Reyes, Renato B.; Kupfer, David J. University of Pittsburgh School of Medicine, Western Psychiatric Institute and Clinic, 3811 O'Hara St., Pittsburgh, PA 15261 **Imipramine and REM sleep: cholinergic mediation in animals.** Psychopharmacology. 69(1):5-9, 1980.

Sleep EEG recordings were obtained from male Holtzman rats treated with imipramine (1.25, 2.5, or 5.0mg/kg i.p.), physostigmine (1.0mg/kg i.p.), or both. REM sleep latency and duration were not significantly altered when the two lower doses of imipramine were given alone, but total REM time was reduced when these doses were given in combination with physostigmine. The high dose of imipramine significantly increased REM latency and reduced REM time when given alone, but these effects were antagonized by physostigmine. When given alone, physostigmine had no significant effect on REM sleep. It is suggested that the anticholinergic properties of tricyclic antidepressants may be crucial to their effects on REM latency. 19 references. (Author abstract modified)

000407 Holmgren, Bjorn; Urba-Holmgren, Ruth; Aguiar, Margarita; Rodriguez, Renzo. Dept. of Neurophysiology, National Center for Scientific Research, Apartado 6990, Havana, Cuba **Sex hormone influences on yawning behavior.** Acta Neurobiologiae Experimentalis. 40(2):515-519, 1980.

The influence of sex hormone on yawning behavior was investigated in rats. Young male, albino rats were found to yawn significantly more following injection with physostigmine. Treatment with testosterone during 7 days restores cholinomimetrically-induced yawning in castrated males, and increases yawning in normal and adrogenized females. Treatment with estradiol during 1 week does not modify physostigmine-induced yawning behavior in castrated males nor in androgenized females. 23 references. (Author abstract modified)

000408 Honma, Takeshi; Fukushima, Hideaki. National Institute of Industrial Health, 21-1, Nagao 6-Chome, Tama-ku, Kawasaki 213, Japan **The involvement of serotonergic neurons in the central nervous system as the possible mechanism for slow head-shaking behavior induced by methamphetamine in rats.** Psychopharmacology. 65(2):155-159, 1979.

The involvement of serotonergic neurons in the CNS was evaluated as the possible mechanism for slow head shaking (SHS) behavior induced by methamphetamine in rats. Following the i.v. administration of d-methamphetamine (MA), rats showed SHS and stereotyped gnawing (SG) behaviors in a dose dependent manner. Methysergide, cyproheptadine, and p-chlorophenylalanine given intracerebroventricularly (ICV) or systemically significanlty blocked SHS behavior induced by 10mg/kg MA. Combined administration of L-5-hydroxytryptophan and peripheral decarboxylase inhibitor (Ro 4-4602) enhanced SHS behavior. Tyrosine hydroxylase inhibitor (H44/68) blocked SG behaviors, but dopamine beta-hydroxylase inhibitors (FLA 63 and U-14, 624) and combined administration of L-3-,4-dihydroxyphenylalanine and Ro4-4602 enhanced it. These drugs did not affect SHS behavior. Phentolamine, phenoxybenzamine, clonidine, isoproterenol, and propranolol given ICV or systemically showed no effect on either SHS or SG behaviors. These results suggest that SHS behavior is produced by the activation of serotonergic neurons in the CNS and are consistent with the view that SG behaviors are mediated through the release of dopamine. Some neuroleptics inhibited SHS as well as SG behaviors, but the order of inhibitory activity of neuroleptics on SHS behavior was quite different from their effects on SG behaviors induced by MA or apomorphine. 30 references. (Author abstract modified)

000409 Hughes, Robert N.; Beveridge, Ijan J. Dept. of Psychology, University of Canterbury, Christchurch, New Zealand **Effects of experimenter and test location novelty on nonspecific activity in rats and its modification by methamphetamine.** New Zealand Psychologist. 9(1):15-18, 1980.

The influences of familiarity with experimenter and test location on assessments of nonspecific motor activity in rats, and additional effects of methamphetamine, were assessed. Levels of nonspecific activity in female rats were determined by an interaction between familiarity of the experimenter and the room in which the testing occurred. In a second experiment, 2.9mg/kg methamphetamine increased activity when the rats were tested by a familiar experimenter in either a familiar or novel room, and by an unfamiliar experimenter in a familiar room. However, the effect did not appear when both the experimenter and thes test location were unfamiliar. The results indicated the need to consider such influences in studies of drug effects on unconditioned behavior. 13 references. (Author abstract modified)

000410 Izquierdo, Ivan. Depto. de Bioquimica, Instituto de Biociencias, UFRGS (centro), 90000 Porto Alegre, RS, Brazil **Effect of beta-endorphin and naloxone on acquisition, memory, and retrieval of shuttle avoidance and habituation learning in rats.** Psychopharmacology. 69(1):111-1115, 1980.

Acquisition of shuttle avoidance behavior and habituation of a rearing response to a tone were impaired by naloxone (0.8mg/kg i.p.), but not by beta-endorphin (2mcg/kg i.p.) in female Wistar rats. Endorphin facilitated retrieval of the two tasks, but naloxone had no effect on retrieval. Retention of the two tasks was facilitated by pretreatment with naloxone and disrupted by pretreatment with beta-endorphin. The role of opiate peptides in mechanisms for state-dependent learning and amnesia are discussed. 26 references. (Author abstract modified)

000411 Jacquet, Yasuko F. Center for Neurochemistry, Rockland Research Institute, Ward's Island, NY 10035 **Stereospecific, dose-dependent antagonism by naloxone of non-opiate behavior in mice.** Pharmacology Biochemistry and Behavior. 13(4):585-587, 1980.

Male Swiss-Webster mice placed in a novel environment showed behavioral activation (jumping, rearing, grooming, and digging) that could be antagonized by naloxone in a dose dependent, stereospecific manner. Naloxone also antagonized the behavioral syndrome induced by morphine (Struab tail and robot-like ambulation). However, larger doses of naloxone were required to antagonize the activation associated with the novel environment than the syndrome induced by morphine. Results suggest that stereospecific antagonism by naloxone is a necessary but not sufficient condition for defining opiate-like action. 6 references. (Author abstract modified)

000412 Jarbe, Torbjorn, U. C. University of Uppsala, Dept. of Psychology, P.O. Box 227, S-751 04, Uppsala, Sweden **LSD-25 as a discriminative stimulus for response selection by pigeons.** Pharmacology Biochemistry and Behavior. 13(4):549-554, 1980.

Pigeons were trained to discriminate between the effects of intramuscular injections of d-lysergic acid diethylamide (LSD, 40mg/kg) and saline in a discrete trial discrimination paradigm. A dose of 18mcg/kg produced 50% LSD appropriate responding. The median time interval for the decay of the LSD stimulus (40mcg/kg) was 84 minutes. Psilocybin and N,N-dimethyltryptamine both produced LSD appropriate responding, but morphine, pentobarbital, delta9-tetrahydrocannabinol, and 2-bromo-d-lysergic acid diethylamide did not. Mescaline severely suppressed responding when given in doses above 10mg/kg, but the responses emitted after 15 or 20mg/kg mescaline were directed to the LSD appropriate key. Methergoline only partially blocked the LSD cue. 44 references. (Author abstract modified)

000413 Jenner, P.; Marsden, C. D.; Thanki, C. M. University Dept. of Neurology, Institute of Psychiatry, Denmark Hill, London SE5 **Behavioural changes induced by N,N-dimethyltryptamine in rodents.** British Journal of Pharmacology. 69(1):69-80, 1980.

N,N-dimethyltryptamine (DMT) in pargyline pretreated rodents induced a dose-dependent behavioral syndrome consisting of hyperactivity, prostration and hindlimb abduction, mild tremor, Straub tail, retropulsion, and jerking. The hyperactivity component of the DMT-induced behavioral syndrome was potentiated by cyproheptadine, methergoline, and mianserin, and inhibited by cinanserin, haloperidol, pimozide, methiothepin, and propranolol, and not affected by 501C67-sulphate and methysergide. The DMT-induced behavioral syndrome appears to consist of two components which differ in their response to drugs affecting brain monoamines: 1) hyperactivity; and 2) other behavioral changes. The hyperactivity component may be expressed via dopamine mechanisms, but the other behavioral changes are not. The two behaviors do not respond consistently to drugs believed to alter brain 5-hydroxytryptamine function. 46 references. (Author abstract modified)

000414 Jurna, I.; Heinz, G. Institut fur Pharmacologie und Toxikologie, Universitat Saarlandes, D-6650 Homburg/Saar, Germany **Anti-nociceptive effect of morphine, opioid analgesics and haloperidol injected into the caudate nucleus of the rat.** Naunyn-Schmiedeberg's Archives of Pharmacology. 309(2):145-151, 1979.

The effects of intracaudate (i.c.) microinjections of morphine, opioid analgesics, and haloperidol on the tail flick response to radiant heat were examined in Wistar rats. Bilateral i.c. injections of morphine (5mcg), pethidine (50mcg), levorphanol (4mcg), dextrophan (10mcg), and haloperidol (5mcg) significantly increased the reaction time of the tail flick response. The antinociceptive effects of i.c. morphine or levorphanol were abolished by i.p. injection of 0.2mg/kg naloxone or 2mg/kg apomorphine. The antinociceptive effects of pethidine, dextrorphan, and haloperidol were reduced but not abolished by i.p. naloxone. The effect of i.c. haloperidol was abolished by i.p. apomorphine.

Bilateral i.c. injections of 5mcg naloxone or 10mcg apomorpine reduced but did not abolish the antinociceptive effects of i.p. injection of morphine (2mg/kg) or haloperidol (2mg/kg). 49 references. (Author abstract modified)

000415 Kaakkola, S. Dept. of Pharmacology, University of Helsinki, Siltavuorenpenger 10, SF-00170 Helsinki 17, Finland **Circling behaviour induced by intranigral injection of baclofen in rats.** Archives Internationales de Pharmacodynamie et de Therapie. 244(1):113-122, 1980.

The question of whether the contralateral circling behavior induced by various doses of baclofen injected unilaterally into the rat substantia nigra (SN) differs from that induced by GABA and muscimol was investigated. Baclofen was found to induce a dose dependent contralateral circling behavior when injected unilaterally into the pars reticula of the rat SN. The results of pretreatment with bicuculline, haloperidol, strychnine, and atropine on the circling behavior induced by baclofen are reported. The results show that baclofen, when injected unilaterally into the SN, causes contralateral circling behavior similar to that described for GABA and muscimol. This suggests that baclofen may have some GABA agonist activity in the SN. The contralateral circling behavior induced by baclofen seems to be mediated by both dopaminergic and nondopaminergic systems. 30 references. (Author abstract modified)

000416 Kalichman, Michael W.; Burnham, W. McIntyre. Dept. of Pharmacology, University of Toronto, Toronto, Ontario, M5S 1A8, Canada **Locomotor and convulsive responses to picrotoxin in amygdala-kindled rats.** Experimental Neurology. 70(1):167-172, 1980.

Amygdala kindled rats and handled control animals were tested for differences in locomotion and convulsive activity produced by picrotoxin, a specific synaptic antagonist of the putative neurotransmitter GABA. Compared with controls, the gross activity of kindled rats decreased more rapidly with increasing doses. Kindled rats were more likely to convulse with the higher doses. These results suggest a functional deficit in the GABA system of kindled rats as measured by locomotion and convulsive activity. 15 references. (Author abstract modified)

000417 Kawasaki, Hiromu; Watanabe, Shigenori; Ueki, Showa. Watanabe: Dept. of Pharmacology, Faculty of Pharmaceutical Sciences, Kyushu University, Fukuoka 812, Japan **Effects of chronic administration of delta9-tetrahydrocannabinol on the cardiovascular system, and pressor and behavioral responses to brain stimulation in freely moving rats.** European Journal of Pharmacology. 65(1):63-69, 1980.

The effects of chronic administration of delta9-tetrahydrocannabinol (THC) on the cardiovascular system, and the pressor and behavioral responses to brain stimulation were investigated in freely moving rats with chronic electrode and arterial cannula implants. On the first day, THC induced a significant decrease in heartrate and rise in blood pressure, and the animals exhibited abnormal behavior such as catalepsy, walking backward, and pivoting. On the 5th day of THC administration, the bradycardia induced by THC markedly decreased, and on the 10th day, tachycardia was observed. The pressor effect of THC significantly increased on the 5th and 10th days, but THC-induced abnormal behavior was observed without any changes following chronic administration. Data suggest that tolerance develops only to bradycardic effect of THC and that the decrease in vagal activity may play some role in the development of tolerance. 22 references. (Author abstract modified)

000418 Koblin, Donald D.; Dong, David E.; Eger, Edmond I., II. Dept. of Anesthesia, University of California, San Francisco, CA 94143 **Tolerance of mice to nitrous oxide.** Journal of Pharmacology and Experimental Therapeutics. 211(2):317-325, 1979.

Male CD-1 mice continuously exposed to a subanesthetic dose of nitrous oxide (N20) developed tolerance, apparent in the increased dose required to abolish the righting reflex in 50% of the animals. Tolerance to 50 or 70% N20 developed within 1 week and was maximal at 2 weeks. Mice exhibited a withdrawal syndrome when a 3 week exposure to 40 to 70% N20 was terminated. Tolerance to N20 was lost within 6 days of N20 termination. 48 references. (Author abstract modified)

000419 Kokkinidis, Larry; Zacharko, Robert M.; Predy, Patrick A. Dept. of Psychology, University of Saskatchewan, Saskatoon, Saskatchewan, Canada S7N 0W0 **Post-amphetamine depression of self-stimulation responding from the substantia nigra: reversal by tricyclic antidepressants.** Pharmacology Biochemistry and Behavior. 13(3):379-383, 1980.

The effects of long-term amphetamine treatment on self-stimulation responding from the substantia nigra were investigated. Rates of self-stimulation responding were substantially depressed among rats chronically treated with amphetamine and tested in the absence of the drug. When rats were subsequently retested after a two day hiatus in which they received imipramine or amitriptyline, the postamphetamine depression of rates of self-stimulation responding was also evident during a continuation of the drug (imipramine or amitriptyline) test sequence, for seven test sessions. The results are discussed in terms of changes in dopamine and acetylcholine neurotransmission following long-term amphetamine treatment. 26 references. (Author abstract modified)

000420 Koupilova, M.; Fusek, J.; Hrdina, V. Purkyne Medical Research Institute, 502 60 Hradec Kralove, Czechoslovakia **Diazepam in combination with tacrine derivatives antagonizes behavioural effects of anticholinergic psychotomimetics in rats.** Activitas Nervosa Superior. 21(3):182-183, 1979.

The effects of diazepam and the combination of diazepam and tacrine derivatives on exploratory activity, motor coordination, and conditional and operant behaviors were investigated in rats. Diazepam alone decreased rotating rod performance, depressed exploratory activity, but increased rate of conditioning in a shuttle box situation and improved recall (long-term memory) in a Skinner box. The combination of diazepam with tacrine derivative TA 03 improved recall of both avoidance and operant alimentary reaction. Diazepam in combination with tacrine potentiated the effects of 3-quinuclidyl benzilate. Diazepam in combination with TA 11 antagonized motor activity, increasing the effects of scopolamine. Diazepam in combination with TA 03 increased the effects of ditrane and scopolamine.

000421 Kow, Lee-Ming; Zemlan, Frank P.; Pfaff, Donald W. Rockefeller University, New York, NY 10021 **Attempts to reinstate lordosis reflex in estrogen-primed spinal female rats with monoamine agonists.** Hormones and Behavior. 13(3):232-240, 1979.

Attempts were made to reinstate lordosis reflex in estrogen primed spinal female rats with monoamine agonists using two 5-HT stimulants (quipazine maleate and 5-methoxy-N, N-dimethyltryptamine). After treatment with quipazine, some spinal rats with complete transection at low thoracic levels were able to show hindquarter responses which resembled parts of the lordosis reflex. Serotonin receptor stimulants also increased the intensity and receptive field size of vertebral dorsiflexion, a component of lordosis. 35 references. (Author abstract modified)

000422 Kozlowski, Michael R.; Marshall, John F. Dept. of Psychobiology, University of California, Irvine, CA 92717 **Rota-**

tion induced by intranigral injections of GABA agonists and antagonists: zone-specific effects. Pharmacology Biochemistry and Behavior. 13(4):561-567, 1980.

Picrotoxin and bicuculline methiodide were injected into the pars comapacta or pars reticulata of male Sprague-Dawley rats at several anterior/posterior levels. Both drugs caused ipsilateral turning when injected into the pars compacta and contralateral turning when injected into the pars reticulata. Pretreatment with 6-hydroxydopamine (6-OHDA) abolished the ipsilateral but not contralateral rotation. Muscimol produced contralateral turning when injected into the pars reticulata or pars compacta; 6-OHDA attenuated only contralateral turning induced by muscimol only after injections in the pars compacta. Results suggest that GABA receptors mediate at least two independent actions in substantia nigra. 31 references. (Author abstract modified)

000423 Laguzzi, R. F.; Adrien, J. Laboratoire de Physiologie, Faculte de Medecine Pitie-Salpetriere, Universite P. et M. Curie, INSERM U3, F-75013 Paris, France **/Reversal of parachlorophenylalanine induced insomnia by 5-hydroxytryptophan in the rat./** Inversion de L'insomnie produite par la para-chlorophenylalanine chez le rat: administration intraperitoneale et intraventriculaire de 5-hydroxytryptophane. Archives Italiennes de Biologie. 118(2)l09-123, 1980.

5-Hydroxytryptamine (5-HT) was administered intraperitoneally or intraventricularly to rats treated with para-chlorophenylalanine (PCPA) in an attempt to reverse the insomnia created PCPA. 5-HT induced a reversal of the insomnia in both slow and paradoxical sleep states when the dose administered was greater than 50mg/kg (i.p.) or 1mcg (i.v.) This reversal was statistically significant for both sleep states at the 0.2 level using the Wilcoxon test and at 0.5 using the Mann Whitney U test. The results agree with findings obtained in studies conducted with cats. They seem to confirm that the serotoninergic system plays a role, still undetermined, in regulating vigilance in rats. 32 references.

000424 Lai, H.; Carino, M. A.; Sperry, R.; Horita, A. Dept. of Pharmacology, University of Washington, Seattle, WA 98195 **Effects of thioridazine on apomorphine-elicited stereotypic behavior and motor activity.** Pharmacology Biochemistry and Behavior. 13(3):397-401, 1980.

The effects of thioridazine on apomorphine elicited stereotypic behavior and motor behavior were investigated. Bilaterally injected thioridazine in the striata of rats augmented the stereotypic behavior elicited by apomorphine. The enhancing effect was attenuated by pretreatment with alpha-methyl-p-tyrosine. At 48 h postinjection of thioridazine, motor suppression from a low dose of apomorphine was enchanced; however, motor response to a high dose of apomorphine was not affected. Possible mechanisms of action of thioridazine are discussed. 31 references. (Author abstract modified)

000425 Levine, Jon D.; Murphy, Dennis T.; Seidenwurm, David; Cortez, Anne; Fields, Howard L. Dept. of Neurology, University of California, San Francisco, CA 94143 **A study of the quantal (all-or-none) change in reflex latency produced by opiate analgesics.** Brain Research. 201(1):129-141, 1980.

The quantal (all or none) change in reflex latency produced by opiate analgesics was studied in the rat tail flick paradigm. Morphine and pentazocine produced a stepwise increase in latency which rose from near baseline to cut off (greater than 20 sec) in less than 30 sec. The proportion of rats showing this stepwise change increased with increasing dose, but the step itself was independent of dose. Increasing heat intensity to the tail shortened the baseline latency and raised the mean dose of morphine required to produce a step latency increase. A step increase in latency was also observed when paw withdrawal instead of tail flick was measured. It is hypothesized that the analgesic behavior described partly defines the operating characteristics of an intrinsic endorphin mediated analgesia system which mediates narcotic suppression of withdrawal reflexes. 22 references. (Author abstract modified)

000426 Lipton, Susan V.; McGough, Joy P.; Shaywitz, Bennett A. Shaywitz: Yale University School of Medicine, Dept. of Pediatrics and Neurology, 333 Cedar St., New Haven, CT 06510 **Effects of apomorphine on escape performance and activity in developing rat pups treated with 6-hydroxydopamine (6-OHDA).** Pharmacology Biochemistry and Behavior. 13(3):371-377, 1980.

The effects of apomorphine on escape performance and activity in developing rat pups treated with 6-hydroxydopamine (6-OHDA) so that brain dopamine concentrations but not norepinephrine (NE) concentrations were reduced, were investigated. At 19 days of age, apomorphine increased general motor activity in normal but not 6-OHDA pups (though these pups were significantly hyperactive prior to apomorphine). Results indicate a peak effect of apomorphine on general motor activity at three weeks of age in normal pups. Results also suggest that apomorphine disrupts escape learning, an effect correlated with the apomorphine-induced increase in motor activity. 31 references. (Author abstract modified)

000427 Lucot, J. B.; Wagner, G. C.; Schuster, C. R.; Seiden, L. S. Dept. of Pharmacological and Physiological Sciences, University of Chicago, 947 E. 58th St., Chicago, IL 60637 **The effects of dopaminergic agents on the locomotor activity of rats after high doses of methylamphetamine.** Pharmacology Biochemistry and Behavior. 13(3):409-413, 1980.

The effects of dopaminergic agents on the locomotor activity of rats after high doses of methylamphetamine were investigated. Treatment of rats with 100mg/kg/day of methylamphetamine for four days produced long-lasting (16 weeks) depletions of CNS levels of dopamine but not of norepinephrine. This methylamphetamine treatment also attenuated the ability of methylamphetamine and apomorphine to produce increases in locomotor activity without shifting the dose response curve to the right or left. These rats underwent significant decreases in activity after lower doses of haloperidol while the response to L-dopa was virtually unchanged. 17 references. (Author abstract modified)

000428 Machlis, Lee E. Dept. of Psychology, Dalhousie University, Halifax, Nova Scotia, Canada B3H 4J1 **Apomorphine: effects on the timing and sequencing of pecking behavior in chicks.** Pharmacology Biochemistry and Behavior. 13(3):331-336, 1980.

The effects of apomorphine on the timing and sequencing of pecking behavior in chicks were investigated. The hypothesis that stereotyped behavior induced by apomorphine is impervious to environmental influence was tested by analyzing the patterning of pecks at two differently colored stimuli in three day old chicks treated with apomorphine. While normal chicks strongly prefer one stimulus over the other, apomorphine appears to render the choice behavior of chicks insensitive to differences between the stimuli. This result might suggest that apomorphine treated chicks no longer perceive differences between the stimuli, but an analysis of the timing of pecks reveals that differences are still perceived since the two stimuli elicit different rates of pecking. 33 references. (Author abstract modified)

000429 Malec, Danuta; Langwinski, Romuald. Langwinski: Dept. of Pharmacodynamics, Institute of Clinical Pathology, Medical School, Staszica 4, 20-081 Lublin, Poland **The influence of 5-HT receptor blocking agents on the behavioral effects of analgesics in rats.** Psychopharmacology. 69(1):79-83, 1980.

The antinociceptive actions of morphine, codeine, fentanyl, and pentazocine in male Wistar rats were not altered by the serotonin receptor blockers methergoline, methysergide, mianserine, cyproheptadine, or pizotifen. Methergoline caused a dose dependent reduction in catalepsy induced by morphine, codeine, or fentanyl, but cyproheptadine and pizotifen did not modify the cataleptic effects of these drugs. Methysergide abolished only morphine catalepsy. Results suggest that serotonergic mechanisms play a greater role in the cataleptic effects of the drugs tested than in their analgesic effects. 34 references. (Author abstract modified)

000430 McIntosh, Tracy K.; Vallano, Mary Lou; Barfield, Ronald J. Dept. of Surgery, L-910, Boston University Medical Center, 80 East Concord St., Boston, MA 02118 **Effects of morphine, beta-endorphin and naloxone on catecholamine levels and sexual behavior in the male rat.** Pharmacology Biochemistry and Behavior. 13(3):435-441, 1980.

The effects of morphine, beta-endorphin and naloxone on catecholamine levels and sexual behavior in the male rat were investigated. Intraperitoneal administration of the opiate antagonist naloxone hydrochloride to sexually experienced male rats caused a significant reduction in mount and intromission latencies, number of mounts preceding ejaculation, and ejaculation latencies. Intraperitoneal administration of naloxone also stimulated persistant noncopulators to begin mating and to ejaculate within a 20 min test period. Conversely, intraperitoneal administration of morphine sulphate as well as intraventricular injection of the endogenous opiate beta-endorphin produced a complete loss of copulatory behavior in male rats. The deficit in sexual behavior induced by beta-endorphin was correlated with a significant increase in hypothalamic norepinephrine levels. It is suggested that the endogenous opiates may be involved in the mediation of sexual behavior via an interaction with central catecholaminergic systems. 44 references. (Author abstract modified)

000431 McKearney, James W. Worcester Foundation for Experimental Biology, Shrewsbury, MA 01545 **Fixed ratio schedules of food presentation and stimulus shock termination: effects of d-amphetamine, morphine, and clozapine.** Psychopharmacology. 70(1):35-39, 1980.

The effects of d-amphetamine, morphine, and clozapine on responding by squirrel monkeys to a multiple schedule in which 30 responses during a specified time limit resulted in either food presentation or termination of visual stimuli associated with impending shock delivery were investigated. Schedule components were associated with different colored lights and were separated by 60 sec time-out periods in which all lights were extinguished. When different rates of responding were maintained under fixed-ratio schedules of food presentation or of stimulus shock termination, the effects of d-amphetamine but not morphine or clozapine also differed. Results suggest that any dependence of the effects of drugs on the type of maintaining event, such as has been observed with morphine and other drugs on responding under fixed interval schedules, is not a reflection of any absolute influence of the events themselves since differential effects are not observed when the events are presented or terminated under other schedules. The effects of drugs can, but need not depend on the type of consequences that maintain behavior. 14 references. (Author abstract modified)

000432 Mendelson, Wallace B.; Gillin, J. Christian; Dawson, Susan D.; Lewy, Alfred J.; Wyatt, Richard Jed. Biological Psychiatry Branch, Division of Clinical and Behavioral Research, NIMH, Bethesda, MD 20205 **Effects of melatonin and propranolol on sleep of the rat.** Brain Research. 201(1):240-244, 1980.

The effects of melatonin and L-propranolol, which inhibits melatonin synthesis, on sleep were investigated in the rat. Melatonin and L-propranolol were administered to rats at 07:45 h and 19:45 h. Melatonin given in the morning decreased nonREM sleep, but when given at night had no effect on sleep stages. L-propranolol given in the morning had no effect on nonREM sleep, but increased it at night. L-propranolol produced decreases in percentage REM sleep at both times. 14 references. (Author abstract modified)

000433 Menon, M. Krishna; Tseng, Liang-Fu; Loh, Horace H.; Clark, William G. Psychopharmacology Research Laboratory, Veterans Administration Medical Center, Sepulveda, CA 91343 **An electromyographic method for the assessment of naloxone-induced abstinence in morphine-dependent rats.** Naunyn-Schmiedeberg's Archives of Pharmacology. 312(1):43-49, 1980.

Electromyographic (EMG) activities of the suprahyoideal muscle were recorded during naloxone precipitated abstinence in morphine dependent male Sprague-Dawley rats anesthetized with urethane. Three precipitated abstinence signs were observed on EMG recordings after injection of naloxone. Myoclonic twitch activity was apparent within 4 hours of morphine pellet implantation; its sensitivity to naloxone increased with prolonged morphine treatment. Mastication and precipitated shakes could be elicited by naloxone within 24 hours of morphine pellet implantation. 32 references. (Author abstract modified)

000434 Miczek, Klaus A.; O'Donnell, James M. Dept. of Psychology, Tufts University, Medford, MA 02155 **Alcohol and chlordiazepoxide increase suppressed aggression in mice.** Psychopharmacology. 69(1):39-44, 1980.

Alcohol (300, 600, and 1200mg/kg orally) and chlordiazpoxide (CDP, 5, 10, and 20mg/kg orally) failed to alter attack behavior in male Swiss-Webster mice confronting intruder mice in their home cages. When confrontations between attack experienced mice and group housed mice occurred in a neutral cage, attack and threat behavior was suppressed to about 50% of that in the resident's home cage. A low dose of alcohol (300mg/kg) more than doubled the frequency of attacks and threats in the neutral cage. Higher doses of both drugs decreased attacks in the neutral cage. Combined administration of low doses of alcohol (150 and 300mg/kg) and CDP (2.5 and 5.0mg/kg) increased attack and threat frequency in the neutral cage to a greater extent than did either drug alone. 36 references. (Author abstract modified)

000435 Minnema, Daniel J.; DeWitt, Linda; Rosecrans, John A. Dept. of Pharmacology, Virginia Commonwealth University, Richmond, VA 23298 **Antinociceptive comparison of quipazine and morphine.** Communications in Psychopharmacology. 4(2):115-120, 1980.

In order to elucidate the antinociceptive properties of quipazine in mice, its action was compared to morphine's action in the hot plate and tail flick tests. Unlike morphine, quipazine was not antinociceptive in the tail flick test. Even though an increased latency was observed for quipazine (15mg/kg) in the hot plate test, the effect was not dose related and the end point was different (i.e. jumping) than the end point observed for morphine (i.e. licking). The serotonin antagonist, BC105, did not alter the antinociceptive action of morphine in either test, but did antagonize the antinociceptive effect of quipazine. The narcotic antagonist naltrexone blocked the antinociceptive actions of morphine as well as quipazine. While there exist several distinct differences between quipazine and morphine with respect to antinociceptive activity, the observation that naltrexone inter-

acted with quipazine suggests a common link between these two drugs. 11 references. (Author abstract)

000436 Mogenson, Gordon J.; Wu, Michael; Jones, Douglas L. Dept. of Physiology, University of Western Ontario, London, Ontario N6A 5C1, Canada **Locomotor activity elicited by injections of picrotoxin into the ventral tegmental area is attenuated by injections of GABA into the globus pallidus.** Brain Research. 191(2):569-571, 1980.

The attenuation by injections of GABA into the globus pallidus (GP) of locomotor activity elicited by injections of picrotoxin into the ventral tegmental area (VTA) was investigated. The observed increases in locomotor responding after injections of picrotoxin into the VTA and GP confirm the findings of previous studies. Increased locomotor activity with injections of picrotoxin into the GP is considered evidence that nucleus accumbens (NAcc)/GP GABAergic projections contribute to response initiation. The attenuation of the picrotoxin-induced locomotor activity by GABA suggests that VTA/NAcc dopaminergic and NAcc/GP GABAergic projections function together in the initiation of locomotor responses. 10 references.

000437 Mohrland, J. S.; Craigmill, A. L. Upjohn Company, CNS Research, Kalamazoo, MI 49001 **Possible mechanism for the enhanced lethality of morphine in aggregated mice.** Pharmacology Biochemistry and Behavior. 13(3):475-477, 1980.

Morphine was shown to be more lethal to aggregated mice than to isolated mice at an ambient temperature of 29 degrees C but not at 19 degrees C. After morphine administration at 29 degrees C, convulsions were found to be associated with death, and a higher incidence of convulsions was observed in aggregated mice than in isolated mice. After morphine administration at 19 degrees C, there was no clear association between convulsions and death, and there was no significant difference between the incidence of convulsions in isolated and aggregated mice. When tactile stress was induced upon morphine treated isolated mice at 29 degrees C, all of the mice convulsed and died. These results suggest that the greater lethality of morphine in aggregated mice is due to a greater incidence of convulsions which result from stress induced on one animal by the other. 12 references. (Author abstract)

000438 Mumford, L.; Kumar, R. Kumar: Institute of Psychiatry, De Crespigny Park, London SE5 8AF, England **Sexual behaviour of morphine-dependent and abstinent male rats.** Psychopharmacology. 65(2):179-185, 1979.

The sexual behavior of morphine dependent and abstinent male rats was investigated. Morphine HCl impaired the sexual behavior of nontolerant male rats in a dose related way. Mounting responses and the amount of time spent in social and sexual interaction with a receptive female were reduced, while the frequency of contacts remained unchanged. Tolerant male rats which had been maintained on large daily doses of morphine HCl also showed marked variations in sexual behavior, depending upon whether they were tested in the drugged or the abstinent state. When tested 2.5 hours after their usual dose of morphine, sexual behavior was almost completely suppressed although the rats were active and, in one test, made bodily contact more frequently with the females than did the controls. The time spent in social and sexual interaction was markdely reduced and the drugged males appeared to respond inappropriately to the females. When tested after 23 hours withdrawal or 1 hour after the precipitation of abstinence by naloxone, the sexual behavior of tolerant rats was indistinguishable from that of controls. Thus, disturbances of sexual behavior appear to differ from patterns of change in eating and drinking in drugged and morphine abstinent rats. Postdependent rats, tested after 2 weeks of withdrawal, did not differ from controls, unless they were challenged with morphine, when their sexual responses and locomotor behavior were less affected. 26 references. (Author abstract modified)

000439 Munoz, Carlos; Guivernau, Mauricio. Depto. de Farmacologia, Facultad de Medicina, Santiago Norte, Universidad de Chile, Casilla 16387 Santiago 9, Chile **Antagonistic effects of propranolol upon ethanol-induced narcosis in mice.** Research Communications in Chemical Pathology and Pharmacology. 29(1):57-65, 1980.

The duration of ethanol narcosis in Swiss As/W mice was significantly reduced by dl-propranolol, but blood levels of ethanol at the end of narcosis were not significantly changed. The effect of dl-propranolol was not altered by pretreatment with pyrazole, which inhibits alcohol dehydrogenase. The d-isomer of propranolol, which has no beta-blocking action, failed to decrease the duration of ethanol narcosis. Results suggest that the effect of dl-propranolol on ethanol narcosis is mediated by central beta-adrenergic receptors. 12 references. (Author abstract modified)

000440 Nicholson, A. N.; Wright, Catherine M. Royal Air Force Institute of Aviation Medicine, Farnborough, Hamsphire, England **Beta-adrenoceptor antagonists: studies on behaviour (delayed differentiation) in the monkey (Macaca mulatta).** British Journal of Pharemacology. 68(1):75-82, 1980.

The activity of six beta-adrenoceptor antagonists (propranolol, oxprenolol, metoprolol, acebutolol, atenolol, and sotalol) was studied on behavioral activity (delayed differentiation) in the monkey, Macaca mulatta. Lipophilic antagonists, such as propranolol, oxprenolol, and metoprolol are likely to have effects on the CNS, while hydrophilic antagonists may modify the peripheral nervous system. In the dose ranges studied, propranolol had the greatest, and atenolol and acebutolol had the least effects. Atenolol and acebutolol may prove to be particularly useful in humans, when disturbances of the nervous system are to be avoided. 44 references. (Author abstract modified)

000441 Nickolson, Victor J.; Berendsen, Hemmie H. G. Dept. of CNS Pharmacology, Organon Scientific Development Group, Organon, Oss, The Netherlands **Effects of the potential neuroleptic peptide des-tyrosine1-gamma-endorphin and haloperidol on apomorphine-induced behavioural syndromes in rats and mice.** Life Sciences. 27(15):1377-1385, 1980.

The effects of haloperidol and des-Tyr1-gamma-endorphin (DTGE) on climbing induced in mice by high doses of apomorphine and on the yawning syndrome induced in rats by low doses of apomorphine were studied. Based on the assumption that low doses of apomorphine predominantly activate presynaptic dopamine autoreceptors while higher doses predominantly activate postsynaptic dopamine receptors, it is concluded: 1) that haloperidol blocks presynaptic dopamine autoreceptors at low doses and postsynaptic dopamine receptors at higher doses; and 2) that DTGE sensitizes presynaptic dopamine autoreceptors at low doses, thereby strengthening the local feedback mechanism at the dopaminergic nerve ending, and sensitizes postsynaptic dopamine receptors at higher doses. 26 references. (Author abstract modified)

000442 Nistico, G.; De Sarro, G. B.; Rotiroti, D.; Silvestri, R.; Marmo, E. Institute of Pharmacology, Faculty of Medicine, University of Messina, Messina, Italy **Antagonism by classical antiepileptics and sodium valproate of cefazolin induced experimental epilepsy in rats.** Research Communications in Chemical Pathology and Pharmacology. 29(3):429-444, 1980.

Intravenous administration of cefazolin, a semisynthetic cephalosporin, produced generalized convulsions, electrocortical high voltage spikes, and other electrocortical abnormalities in Wistar-Morini rats. Power spectrum analysis revealed a significant increase in total voltage output during the electrocortical epileptogenic discharges. The disorders induced by cefazolin were antagonized by anticonvulsants such as diphenylhydantoin, phenobarbital, clonazepam, and sodium valproate. 27 references. (Author abstract modified)

000443 Nistico, G.; De Sarro, G. B.; Rotiroti, D.; Naccari, F.; Calo, M.; Silvestri, R.; Pisanti, N. Institute of Pharmacology, Faculty of Medicine, University of Messina, Messina, Italy **Behavioral and electrocortical effects after intrastriatal cefazolin in rats are antagonized by drugs enhancing GABA-ergic transmission.** Research Communications in Chemical Pathology and Pharmacology. 29(3):445-458, 1980.

Behavior and electrocortical activity were studied in Wistar-Morini rats treated with cefazolin, a semisynthetic cephalosporin, and with drugs that enhance GABAergic transmission. Cefazolin induced behavioral and locomotor stimulation as well as epileptic electrocortical changes after microinjection into the caudate nucleus or third cerebral ventricle. The effects of intrastriatal cefazolin were antagonized by subsequent infusion of GABA, muscimol, or GABA transaminase inhibitors. Results suggest that the motor and electrocortical effects of cefazolin are due to impaired GABAergic transmission. 19 references. (Author abstract modified)

000444 Noguchi, Yuji; Sato, Shuzo; Ando, Takao; Chiba, Sukehiro. Chiba: Central Research Division, Takeda Chemical Industries, Ltd., 6-3-6 Himurocho, Takatsuki-shi 569, Japan **Retinotoxic effects of diaminodiphenoxybutane in rats.** Pharmacology Biochemistry and Behavior. 13(3):429-434, 1980.

The effects of diaminodiphenoxybutane (DAPB) on visual function in rats were studied using behavioral, electrophysiological, and histological techniques. A light/dark operant discrimination task was learned by rats. DAPB did not modify intensity detection threshold at an intravenous dose of 35mg/kg, but elevated it at doses of 50 and 70mg/kg. Secondly, DAPB did not produce any changes in either electroretinogram (ERG) or visually evoked potential (VEP) at the dose of 35mg/kg, but a marked decrease in the amplitude of the ERG A-wave and B-wave appeared after the doses of 50mg/kg and 70mg/kg. The latency of the VEP first wave was also prolonged in a dose dependent manner. Finally, retinal lesions were revealed in rats receiving 70mg/kg. These results indicate that DAPB has a toxic effect on the retina in rats. 32 references. (Author abstract modified)

000445 Nomura, Yasuyuki. Dept. of Pharmacology, Institute of Pharmaceutical Sciences, Hiroshima University School of Medicine, Kasumi 1-2-3, Hiroshima 734, Japan **The locomotor effect of clonidine and its interaction with alpha-flupenthixol or haloperidol in the developing rat.** Naunyn-Schmiedeberg's Archives of Pharmacology. 313(1):33-37, 1980.

A subcutaneous injection of clonidine (0.039 to 3.9mcmol/kg) produced marked hypermotility in developing Wistar rats on postnatal days 1 through 7, but induced hypomotility in animals older than 20 days. Pretreatment with alpha-flupenthixol and haloperidol significantly reduced the hypermotility induced by clonidine in the young rats. In adults, pretreatment with alpha-flupenthixol enhanced the hypomotility induced by clonidine. Results suggest that intact function of alpha-adrenoceptors and dopamine receptors is involved in the control of locomotor activity in developing rats. 21 references. (Author abstract modified)

000446 Oei, Tian P. S. Dept. of Psychology, La Trobe University, Bundoora, Victoria 3083, Australia **Reversal of schedule-induced self-injection of heroin by naloxone.** Pharmacology Biochemistry and Behavior. 13(3):457-459, 1980.

The reversal of schedule-induced self-injection of heroin by naloxone in naive rats at 80% bodyweight is described. It is noted that previous experimental evidence has shown that an intermittent food delivery schedule interacts with the pharmacological properties of a variety of drugs to produce significant increases in self-injection rates, and that this self-injection behavior is further strengthened when bodyweight is reduced. In the present study, results show a clear reversal in responding following naloxone treatment, suggesting that once an interaction between the schedule-induced behavior and a drug is established, blockade of the reinforcing effects of the drug extinguishes the behavior altogether. 16 references. (Author abstract modified)

000447 Overton, Donald A.; Batta, Satish K. Eastern Pennsylvania Psychiatric Institute, Henry Ave. and Abbottsford Rd., Philadelphia, PA 19129 **Investigation of narcotics and antitussives using drug discrimination techniques.** Journal of Pharmacology and Experimental Therapeutics. 211(2):401-408, 1979.

Long-Evans rats were trained to discriminate morphine from a nondrug condition in a shock escape T-maze task. During subsequent substitution tests, most morphine-like agonists substituted for one another. Naloxone and naltrexone antagonized the discriminable effects of morphine. Cyclazocine, levallorphan, naltrexone, dextromethorphan, ethoheptazine, and the narcotic agonists did not substitute for one another. 19 references. (Author abstract modified)

000448 Pappas, Bruce A.; Gallivan, James V.; Dugas, Tim; Saari, Matti; Ings, Ray. Dept. of Psychology, Carleton University, Ottawa, Ontario K1S 5B6, Canada **Intraventricular 6-hydroxydopamine in the newborn rat and locomotor responses to drugs in infancy: no support for the dopamine depletion model of minimal brain dysfunction.** Psychopharmacology. 70(1):41-46, 1980.

Bilateral intraventricular injections of 6-hydroxydopamine (6-OHDA) after desmethylimipramine (DMI) in rats 1 and 2 days of age, severely depleted brain dopamine (DA) particularly in the neostriatum, where levels in adulthood were about 7% of controls. Compared to vehicle injected control Ss, these rats were hyperactive only at 15 and 20 days of age, and in adulthood were impaired in a two-way avoidance procedure. Rats with similar 6-OHDA treatment but without DMI pretreatment showed severe depletion of brain norepinephrine (NE) as well as DA, and were behaviorally similar to the DA depleted only rats. This behavioral syndrome is similar to that reported after intracisternal injection of 6-OHDA in 5-day-old rats, which has been argued as a model for minimal brain dysfunction (MBD). Contrary to expectation from this model, however, challenge doses of either d-amphetamine or methylphenidate did not reduce, but instead increased activity of these rats. the 6-OHDA treatments also did not alter the enhancement of locomotor activity by scopolamine, which was present at 30 days but not at 15 days. 22 references. (Author abstract modified)

000449 Paul, A.; Chandra, P. Chandra: Gustav-Embden-Zentrum der Biolog. Chemie, Abt. fur Molekularbiologie, Theodor-Stern-Kai 7, D-6000 Frankfurt/Main 70, Germany /**Influence of nicergoline on molecular biological processes in the brain and learning ability of the rat.**/ Einfluss von Nicergolin auf molekularbiologische prozesse im Gehirn und seine Auswirkung auf die Lernfahigkeit der Ratte. Arzneimittel-Forschung. 29(8a):1238-1251, 1979.

The influence of 10-methoxy-1,6-dimethyl-ergoline-8beta-methanol-(5-bromnicotinate) (nicergoline) and some other vasoactive substances on cellular synthesis processes was examined both in vivo and in vitro on brain preparations of mice and rats. Nicergoline was found to have an activating influence on protein biosynthesis. Results of a series of studies of the effects of nicergoline on conditioned learning of rats indicate that nicergoline and also nicergoline tartrate, markedly increase the learning ability of rats of both sexes, in a dose dependent fashion. Brain extracts of these animals which had been trained and treated with nicergoline for a long period of time, showed a stimulating effect on the incorporation of 3H-leucine in the protein synthesis and also a clear stimulation of the Mn2 and Mg2 dependent RNA synthesis, in which certain concentrations exhibited a further positive effect. 49 references. (Journal abstract modified)

000450 Paul, Steven M.; Syapin, Peter J.; Paugh, Beth A.; Moncada, Victoria; Skolnick, Phil. Clinical Psychobiology Branch, NIMH, National Institutes of Health, Bethesda, MD 20205 **Correlation between benzodiazepine receptor occupation and anticonvulsant effects of diazepam.** Nature. 281(5731):688-689, 1979.

Anticonvulsant activity and benzodiazepine recptor occupation were determined in male-C3H/HEN mice during the 72 hours following i.p. injection of 4mg/kg dizaepam. A strong positive correlation between benzodiazepine receptor occupation and protection against pentylenetetrazol-induced seizures was found. Occupation of a small fraction of benzodiazepine receptors was sufficient to produce a complete anticonvulsant effect. Results indicate that the benzodiazepine receptor is involved in mediating the anticonvulsant effects of benzodiazepine and may be involved in preventing the discharge or spread of seizure activity within the CNS. 12 references. (Author abstract modified)

000451 Phillis, John W.; Jiang, Zhigen G.; Chelack, Brian J.; Wu, Peter H. Dept. of Physiology, College of Medicine, University of Saskatchewan, Saskatoon, Sask., Canada S7N 0W0 **Morphine enhances adenosine release from the in vivo rat cerebral cortex.** European Journal of Pharmacology. 65(1):97-100, 1980.

The effects of morphine on adenosine release from the in vivo rat cerebral cortex were investigated. Morphine (1 and 5mg/kg), administered intravenously, increased the rate of efflux of purines from intact rat cerebral cortices prelabelled with (3H)adenosine. Naloxone antagonized morphine's action. It is suggested that the depressant action of morphine on transmission in the CNS may be related to this enhancement of extracellular levels of adenosine and the adenine nucleotides. 10 references. (Author abstract modified)

000452 Piccirillo, M.; Alpert, J. E.; Cohen, D. J.; Shaywitz, B. A. Cohen: Yale Child Study Center, 333 Cedar St., New Haven, CT 06510 **Effects of 6-hydroxydopamine and amphetamine on rat mothering behavior and offspring development.** Pharmacology Biochemistry and Behavior. 13(3):391-395, 1980.

The effects of amphetamine on adult maternal behavior of rats with selective CNS dopamine depletion produced by neonatal administration of 6-hydroxydopamine (6-OHDA) and desmethylimipramine (DMI) were investigated. Pup retrieval, nest building, crouching, and locomotor behaviors were studied in 6-OHDA and DMI treated mothers while offspring were examined with respect to weight, density of fur, age of eye opening, and shuttlebox avoidance learning. Depletion of brain dopamine to 30% of control concentrations was associated with increased crouching time but with no other differences in caregiving, offspring development, or response to amphetamine. Although profound neonatal depletion of dopamine leads to a variety of disturbances in early life, later maternal behavior is adequate and apparently enhanced. The possible role of compensatory brain mechanisms is discussed. (Author abstract modified)

000453 Pilcher, Charles W. T. Dept. of Pharmacology, Faculty of Medicine, P. O. Box Safat 24923, Kuwait **Repeated administration of naltrexone produces tolerance to naloxone-induced hyperalgesia.** Life Sciences. 27(20):1905-1909, 1980.

Repeated administration (i.p.) of the narcotic antagonist naltrexone was found to produce tolerance in mice to naloxone-induced hyperalgesia in the hotplate test. Chronic naltrexone treatment had no effect on pawlick latencies but produced significantly increased jump reaction times in animals receiving an acute injection of saline. Results are interpreted as indicating development of supersensitivity in endorphinergic systems mediating affective components in nociception. 15 references. (Author abstract modified)

000454 Rebec, George V.; Zimmerman, Kenneth S. Dept. of Psychology, Indiana University, Bloomington, IN 47405 **Opposite effects of D-amphetamine on spontaneous neuronal activity in the neostriatum and nucleus accumbens.** Brain Research. 201(2):485-491, 1980.

To investigate the neuronal mechanisms involved in the elaboration of amphetamine-induced stereotypic behavioral responses, spontaneous neuronal activity in the neostriatum and nucleus accumbens following intraperitoneal injection of D-amphetamine was monitored. While 7.5mg/kg D-amphetamine produced a dramatic increase in neostriatal activity, neurons in the nucleus accumbems responded with a prolonged mirror image depression of firing in rats. Results suggest a possible neuronal substrate for the appearance of focused stereotyped behaviors with high doses of D-amphetamine. Low doses of the drug, which typically inhibit neuronal activity in both sites, do not produce these behaviors in the rat. In appears, therefore, that a dose dependent shift in the firing pattern of neurons in neostriatum relative to those in the nucleus accumbens may contribute to the cause of amphetamine-induced focused stereotypy. 34 references.

000455 Risch, Craig; Kripke, Daniel; Janowsky, David. Janowsky: Dept. of Psychiatry (M-003), Univ. of California at San Diego, Medical School, La Jolla, CA 92093 **Flurazepam effects on methylphenidate-induced stereotyped behavior.** Psychopharmacology. 70(1):79-82, 1980.

The effects of flurazepam on methylphenidate-induced increases in stereotypy, gnawing, sniffing, and locomotion were evaluated in Swiss-Webster mice in daytime and nighttime experiments. Methylphenidate increased overall stereotypy and stereotyped gnawing behavior; two doses of methylphenidate increased locomotion and sniffing behavior. Flurazepam augmented methylphenidate-induced stereotyped gnawing behavior and stereotypy. Flurazepam significantly decreased locomotion and sniffing, but did not interact with methylphenidate's effects on locomotion and sniffing. 15 references. (Author abstract modified)

000456 Ritter, Sue; McGlone, John J.; Kelley, Keith W. Kelley: Animal Science Dept., Washington State University, Pullman, WA 99164 **Absence of lithium-induced taste aversion after area postrema lesion.** Brain Research. 201(2):501-506, 1980.

The role of area postrema (AP) in lithium-induced conditioned aversion (CTA) was investigated in AP lesioned and sham operated rats. Results demonstrate that AP lesions abolish the conditioning of taste aversions by LiCl and scopolamine methyl nitrate (SMN), but does not influence the conditioning of amphetamine-induced taste aversions. It is suggested that the AP is

a chemoreceptor for substances of widely disparate chemical structures and may subserve a number of important behavioral roles. Specifically, AP lesions abolish the conditioning of taste aversion by LiCl and SMN and, in addition, may alter bodyweight maintenance and the ingestive response to palatable liquid foods. The fact that AP lesions abolish CTA to LiCl and SMN, but not to amphetamine, supports previous findings which suggest that stimuli for CTAs are received by more than one neural system. 20 references.

000457 Robertson, Ann; Mogenson, G. J. Mogenson: Dept. of Physiology, University of Western Ontario, London, Ontario, Canada N6A 5C1 **Facilitation of self-stimulation of the prefrontal cortex in rats following chronic administration of spiroperidol or amphetamine.** Psychopharmacology. 65(2):149-154, 1979.

The effect of chronic administration of spiroperidol, a dopaminergic antagonist, on self-stimulation of the prefrontal cortex of rats was investigated. When spiroperidol was administered either before or after daily self-stimulation tests for 9 days, self-stimulation rates were significantly elevated for several weeks following withdrawal of the drug. Self-stimulation of the nucleus accumbens, supracallosal bundle, and other forebrain sites was not altered, suggesting that the increased self-stimulation of the prefrontal cortex was also facilitated by chronic administration of d-amphetamine whereas self-stimulation of the supracallosal bundle was suppressed and self-stimualtion of the nucleus accumbens was unchanged. Results suggest that dopamine modulates self-stimulation of the prefrontal cortex. Additionally, the effects of chronic spiroperidol on self-stimulation of this structure may model the therapeutic effects of neuroleptics in humans. 30 references. (Author abstract)

000458 Robin, Marc M.; Palfreyman, Michael G.; Zraika, Monique M.; Schechter, Paul J. Centre de Recherche Merrell International, 16 rue d'Ankara, F-67084 Strasbourg Cedex, France **Mapping of dyskinetic movements induced by local application of picrotoxin or ()-gamma-acetylenic GABA on the rat motor cortex.** European Journal of Pharmacology. 65(4):411-415, 1980.

Dyskinetic movements were studied in male Sprague-Dawley rats after local application of picrotoxin or ()-gamma-acetylenic GABA (GAG) on the cortical surface at various anteroposterior coordinates. Abnormal movements of the head and forelimb were produced by the more anterior applications of picrotoxin of GAG, whereas posterior applications were associated with abnormal hindlimb movements. Assays of GABA transaminase and glutamic acid decarboxylase activities in cortical samples indicated the degree of drug diffusion was quite limited. 10 references. (Author abstract modified)

000459 Robinson, Terry E.; Becker, Jill B.; Ramirez, V. D. Neuroscience Laboratory Bldg., 1103 East Huron, Ann Arbor, MI 48109 **Sex differences in amphetamine-elicited rotational behavior and the lateralization of striatal dopamine in rats.** Brain Research Bulletin. 5(5):539-545, 1980.

Sex differences in both a lateralized behavior (amphetamine elicited rotation) and in the lateralization of striatal dopamine content are described. Amphetamine elicited significantly more partial turns, total rotations, and lateralized (net) rotations in female than in male rats. The two sexes also differed in their pattern of net rotations over time. In females, but not males, the striatum containing higher DA levels after amphetamine was consistenly found to be contralateral to the dominant direction of rotation observed in the first 5 min interval after amphetamine. No relationship was found between rotational behavior and medical frontal cortex DA or norepinephrine. The results are discussed in reference to cerebral lateralization in humans, and to possible sex differences in the modulatory effects of gonadal steroid hormones on striatal function. 62 references. (Author abstract modified)

000460 Rokyta, R.; Mares, P.; Sobotka, P. Dept. of Pathophysiology, Medical Faculty, Charles University, Lidicka 1, 301 67 Plzen, Czechoslovakia **Hypersynchronous activity elicited by gamma-hydroxybutyrate during ontogenesis in rats.** Activitas Nervosa Superior. 21(3):178-179, 1979.

The effects of gammahydroxybutyrate (GHB) on electrocorticogram (ECoG patterns of rats aged 9, 12, 15, 25, and 90 days were investigated, and the utility of the hypersynchronous waves or spikes typically elicited by GHB as a model of petitmal epilepsy was evaluated. ECoG was recorded from sensorimotor (frontal) and visual (occipital) areas of both hemispheres for at least 30 minutes after the GHB injection. Episodic hypersynchronous activity was found to be most sharply defined in 25-day-old rats, i.e., in animals before the onset of sexual maturation. This is in aggreement with the age profile in human petit-mal epilepsy. 5 references.

000461 Rotrosen, John; Stanley, Michael; Kuhn, Cynthia; Wazer, David; Gershon, Samuel. Dept. of Psychiatry, New York University Medical Center, 550 First Avenue, New York, NY 10016 **Experimental dystonia induced by quaternary-chlorpromazine.** Neurology. 30(8):878-881, 1980.

Experimental dystonia induced by quaternary chlorpromazine (QCPZ) is described. When QCPZ was administered intraventricularly (ICV) to rats, it induced a lateralized dystonic reaction, which progressed to head to tail barrel rolling. The syndrome persisted for approximately 10 min, was not antagonized by pretreatment with drugs used to treat extrapyramidal movement disorders, and could not be mimicked by ICV administration of dopamine antagonists. Unlike known dopamine antagonists, QCPZ does not alter dopamine turnover, cause prolactin release in vivo, or bind to dopamine/neuroleptic receptors in vitro. These data suggest that QCPZ differs substantially from CPZ in pharmacologic action, and that it elicits a behavioral syndrome of potential use for studying dystonias. 12 references. (Author abstract modified)

000462 Ruffing, Diane M.; Domino, Edward F. Reprint Secretary, Lafayette Clinic, 951 E. Lafayette, Detroit, MI 48207 **First dose behavioral tolerance to phencyclidine on food-rewarded bar pressing behavior in the rat.** Psychopharmacology 69(1):1-4, 1980.

Phencyclidine (PCP, 1.0, 1.8, 2.4, or 3.2mg/kg i.p.) caused a dose related suppression of bar-pressing behavior in male Holtzman rats trained on a food rewarded, fixed-ratio task. The duration of response suppression was significantly greater after the first injection of PCP than after subsequent injections. However, the reduction in response to PCP was not observed when the first dose environmental situation was altered. Results indicate that a single dose of PCP can induce learned behavioral tolerance in rats. 22 references. (Author abstract modified)

000463 Sanberg, Paul R.; Fibiger, Hans C. Dept. of Behavioural Biology, Research School of Biological Sciences, Australian National University, Canberra, Australia **Body weight, feeding, and drinking behaviors in rats with kainic acid-induced lesions of striatal neurons -- with a note on body weight symptomatology in Huntington's disease.** Experimental Neurology. 66(3):444-466, 1979.

Kainic acid lesions of the male Wistar rat striatum caused temporary aphagia and adipsia and a reduction in mean body weight. The ad libitum food and water intake of lesioned rats did not differ from control intake, but 24 hour food or water deprivation caused relative increases in the food and water intakes

of lesioned animals during the next 24 hours. Anorexia induced by d-amphetamine or fenfluramine was significantly enhanced in the lesioned animals. Motor deficits were also observed. Results confirm the suitability of this animal model for the study of Huntington's disease. 68 references. (Author abstract modified)

000464 Scatton, B.; Worms, P. Synthelabo-LERS, Dept. of Biology, 31, Avenue Paul-Vaillant Couturier, F-92220 Bagneux, France **Tolerance to increases in striatal acetylcholine concentrations after repeated administration of apomorphine dipivaloyl ester.** Journal of Pharmacy and Pharmacology. 31(12):861-863, 1979.

The effects of apomorphine dipivaloyl ester (ADPE) on behavior and on striatal acetylcholine (ACh) concentrations were examined in male CD rats. A single ADPE injection caused a significant increase in ACh concentration in the striatum, but this response diminished with repeated ADPE administration over 14 days. The attenuation of the stereotyped behavior elicited by ADPE also reflected the development of tolerance with repeated treatment. Striatal choline concentrations were not altered by acute or repeated treatment with ADPE. It is concluded that sustained stimulation of dopamine receptors by ADPE results in hyposensitivity of striatal cholinergic cells, which may be related to changes in the behavioral actions of ADPE. 18 references.

000465 Schechter, Martin D. Dept. of Pharmacology, Northeastern Ohio Universities College of Medicine, Rootstown, OH 44272 **Different dopaminergic mechanisms for amfonelic acid, amphetamine and apomorphine.** Pharmacology Biochemistry and Behavior. 13(4):497-500, 1980.

Male Sprague-Dawley rats trained to discriminate between the stimulus properties of 0.16mg/kg i.p. apomorphine and saline in a two-lever food motivated operant task showed no generalization from apomorphine to d-amphetamine or amfonelic acid. However, 0.1 or 0.2mg/kg n-propylnorapomorphine produced responses and perseverance on the apomorphine appropriate lever similar to that seen after 0.16mg/kg apomorphine. Results suggest that d-amphetamine, amfornelic acid, and apomorphine produce their dopaminergic effects through different mechanisms. 22 references. (Author abstract modified)

000466 Schlosberg, Arthur J.; Harvey, John A. Harvey: Dept. of Psychology, University of Iowa, Iowa City, IA 52242 **Effects of L-dopa and L-5-hydroxytryptophan on locomotor activity of the rat after selective or combined destruction of central catecholamine and serotonin neurons.** Journal of Pharmacology and Experimental Therapeutics. 211(2):296-304, 1979.

The motor effects of L-dopa and L-5-hydroxytryptophan (5-HTP) were measured after inhibition of extracerebral decarboxylase in male albino rats with selective damage to the catecholamine or 5-hydroxytryptamine systems or combined destruction of both systems. Results showed that 5-HTP was at least four times more potent than L-dopa in producing motor stimulation. Increases in motor activity induced by L-dopa were enhanced only in the animals with 6-hydroxydopamine lesions, whereas increases in activity induced by 5-HTP were enhanced only in animals with lesions of the midbrain raphe nucleus. Both types of drug-induced activity were enhanced in animals with combined lesions. 44 references. (Author abstract modified)

000467 Seeger, Thomas F.; Nazzaro, Jules M.; Gardner, Eliot L. Dept. of Pharmacology, University of Massachusetts Medical Center, Worcester, MA 01605 **Selective inhibition of mesolimbic behavioral supersensitivity by naloxone.** European Journal of Pharmacology. 65(4):435-438, 1980.

Acute injection of naloxone (2mg/kg) did not alter ventral tegmental intracranial self-stimulation (ICSS) in male Sprague-Dawley rats, but acute morphine (5mg/kg) increased the ICSS rate by 46%. Chronic haloperidol (1mg/kg/day for 21 days) produced mesolimbic dopaminergic supersensitivity, reflected in a 42% increase in ICSS. This supersensitivity was partially blocked by naloxone, but augmented by morphine. Results suggest that enkephalinergic systems may be involved in neuroleptic-induced dopaminergic behavioral supersensitivity. 11 references. (Author abstract modified)

000468 Sepinwall, Jerry; Cook, Leonard. Dept. of Pharmacology, Research Division, Hoffmann-LaRoche, Inc., Nutley, NJ 07110 **Mechanism of action of the benzodiazepines: behavioral aspect.** Federation Proceedings. 39(12):3024-3031, 1980.

The mechanism of action of benzodiazepines is considered from a behavioral pharmacology perspective, particularly with respect to methods that involve suppression of responding such as the punishment/conflict model, and four biochemical hypotheses of current interest are reviewed. Several lines of evidence suggest that the benzodiazepine receptor in brain is related to the antianxiety actions of benzodiazepines, including a high correlation between potency in the binding assay and potency in the conflict test, and some novel nonbenzodiazepine compounds that bind to the receptor and are also active in the conflict test. The evidence is mixed concerning whether inosine or hypoxanthine may be endogenous ligands for the benzodiazepine receptor. Unlike benzodiazepine, neither inosine nor hypoxanthine antagonizes convulsions induced by pentylenetetrazol in the rat. Much research indicates that GABA mediates various electrophysiological and biochemical actions of benzodiazepines. Several studies also found that picrotoxin or bicuculline block the behavior effects of benzodiazepines, although some conflicting results have been reported. Most available findings suggest that GABA agonists, e.g., muscimol, do not exhibit the antianxiety profile of the benzodiazepines. Additional evidence which supports the hypothesis that the behavioral actions of the benzodiazepines are mediated by serotonin, possibly with the involvement of GABA, is reviewed. 47 references. (Author abstract modified)

000469 Shannon, H. E.; Vaupel, D. B.; Risner, M. E.; Cone, E. J. National Institute of Drug Abuse, Addiction Research Center, Lexington, KY **Pharmacology of phenethylamine trace amines in the dog -- discussion.** Psychopharmacology Bulletin. 16(1):54-55, 1980.

The capacity of phenethylamine (PEA) and phenethanolamine (PEOH) to function as positive reinforcers in the dogs was evaluated and their effect on autonomic function and the flexor reflex in the chronic spinal dog was examined. The N-methyl homologs of PEA and PEOH were also investigatred. All four of the phenethylamines functioned as positive reinforcers in a self-administration task. The positive reinforcing properties of amphetamine but not PEA were antagonized by pimozide. The pharmacologic profiles of these phenethylamines were also evaluated in the intact dog and the chronic spinal dogs, and these profiles were compared to those for the standard drugs amphetamine and LSD. All four of these phenethylamines produced effects in common with both amphetamine and with LSD, yet these compounds also produced effects which distinguised them from either of these two standard psychoactive drugs. Results suggest that elevated levels of PEA in humans could have profound effects on behavior.

000470 Sherman, Jack E.; Pickman, Carrie; Rice, Anne; Liebeskind, John C.; Holman, Eric W. Dept. of Psychology, University of California, Los Angeles, CA 90024 **Rewarding and aversive**

effects of morphine: temporal and pharmacological properties. Pharmacology Biochemistry and Behavior. 13(4):501-505, 1980.

In a study of morphine-induced location preferences and flavor aversions, female Sprague-Dawley rats were given morphine sulfate (10mg/kg i.p.) immediately before or after confinement for 20 minutes in one side of a shuttlebox with access to a flavored solution. On control trials the rats were given saline and confined for 20 mintues on the opposite side with a different flavored solution. In subsequent choice tests, morphine pretreatment produced a preference for the side associated with morphine and indifference to the flavors, but morphine injections given after confinement produced an aversion to the flavor paired with morphine and indifference to the sides. Naloxone (1mg/kg i.p.) blocked the morphine-induced side preference, but had no effect when given alone. 38 references. (Author abstract modified)

000471 Sherman, Jack E.; Roberts, Tere; Roskam, Sherry E.; Holman, Eric W. Dept. of Psychology, University of California, Los Angeles, CA 90024 **Temporal properties of the rewarding and aversive effects of amphetamine in rats.** Pharmacology Biochemistry and Behavior. 13(4):597-599, 1980.

Conditioned location preferences and flavor aversions were examined in female Sprague-Dawley rats treated with amphetamine. Animals were given amphetamine and then confined for 20 minutes in one side of a shuttlebox with access to a flavored solution; on control trials with saline injections, they were confined on the opposite side with a different flavor. On subsequent choice tests, animals preferred the side and avoided the flavor associated with amphetamine when they were placed in the shuttlebox 5 or 120 minutes after injection, but were indifferent to the sides and flavors when the interval was increased to 240 minutes. 7 references. (Author abstract modified)

000472 Shiomi, Hirohito; Nakahara, Hajime; Segawa, Mitsuru; Takagi, Hiroshi. Dept. of Pharmacology, Faculty of Pharmaceutical Sciences, Kyoto University, Kyoto 606, Japan **Relationship between delta9-tetrahydrocannabinol-induced mouse killing behavior on the rat and the metabolism of monoamines in the brain, particularly the olfactory bulb.** Japanese Journal of Pharmacology. 29(5):803-806, 1979.

Changes in brain monoamine metabolism associated with muricidal behavior induced by delta9-tetrahydrocannabinol (THC, 20mg/kg i.p.) were studied in male Sprague-Dawley rats. A 39% increase in noradrenaline (NA) and a 34% increase in normetanephrine (NM) were seen in the olfactory bulb (OB) of rats made muricidal by THC, but no significant changes in NA and NM were seen in the OB of rats that were not muricidal after THC. NA increased and NM decreased in the diencephalon of both groups after THC, but levels did not differ significantly between muricidal and nonmuricidal animals. A decrease in 5-hydroxyindoleacetic acid (5-HIAA) content in the OB and an increase in the 5-HIAA content of the diencephalon were observed in both muricidal and nonmuricidal rats after THC. 15 references.

000473 Shkodrova, D.; Hinkova, L.; Nicolov, N. Nivolov: Dept. of Pathophysiology, 1, G, Sofiski Str., Sofia 1431, Bulgaria **Open-field performance of rats after endotoxin treatment.** Agressologie. 20(4):207-210, 1979.

The open-field performance of rats after treatment with endotoxins was studied. The sample consisted of 75 white male Wistar rats (40 control and 35 experimental). The experimental rats were treated with an intravenous injection of 10mg/kg of E. coli endotoxin, while the control rats received saline isontonic solution. At the second, fourth, sixth and eighth hour the rats' behavioral parameters were traced by the open-field test. Results show a suppression of the horizontal and vertical motor activity in the experimental rats, which disappeared by the eighth hour. A suppression of emotional reactivity was also noted. 12 references. (Author abstract modified)

000474 Shouse, M. N.; Sterman, M. B. Veterans Administration Medical Center, Sepulveda, CA 91343 **Relation of monomethylhydrazine (MMH) seizure thresholds to afterdischarge thresholds with amygdaloid stimulation in cats.** Experimental Neurology. 66(3):667-673, 1979.

Monomethylhydrazine (MMH) seizure latencies in naive cats were significantly correlated with afterdischarge thresholds obtained in the same animals at the beginning of basolateral amygdala kindling procedures. Animals with prolonged seizure latencies showed significantly higher afterdischarge thresholds, whereas shorter latencies were associated with lower afterdischarge thresholds. Results suggest endogenous differences in seizure susceptibility that are definable regardless of procedure. 34 references. (Author abstract modified)

000475 Siemkowicz, Eugeniusz. Dept. of Anesthesia, Hvidovre Hospital, DK-2650 Hvidovre, Denmark **Improvement of restitution from cerebral ischemia in hyperglycemic rats by pentobarbital or diazepam.** Acta Neurologica Scandinavica. 61(6):368-377, 1980.

The effects of pentobarbital or diazepam on recovery from cerebral ischemia in hyperglycemic rats were investigated. Hyperglycemic rats were exposed to 10 min of complete cerebral ischemia. Rats with 26mM plasma glucose levels died. Rats with the same degree of hyperglycemia, treated after ischemia with pentobarbital or diazepam, survived the observation period of 21 days, but manifested incomplete recovery. The same treatment given to rats with higher degrees of hyperglycemia did not prevent death. It is concluded that postischemic treatment with anticonvulsive drugs may improve clinical recovery from ischemia in moderately hyperglycemic rats. 19 references. (Author abstract modified)

000476 Smith, E. S.; Isaac, W. Isaac: Dept. of Psychology, University of Georgia, Athens, GA 30602 **The effects of the methylphenidate and d-amphetamine related to route of administration.** Bulletin of the Psychonomic Society. 16(3):235-237, 1980.

The effects of methylphenidate hydrochloride and d-amphetamine sulfate were compared when given orally and by intraperitoneal injection to rats. Both drugs increased the level of locomotor activity when given by injection. Oral administration of d-amphetamine produced a lesser effect, but methylphenidate was ineffective when given by this route. It is suggested that the minimal effect of orally administered methylphenidate could be due to a slow absorption of the drug when administered orally combined with a rapid metabolism of the drug, resulting in minimal effects being seen in the behavior of the rat. 12 references. (Author abstract modified)

000477 Snead, O. Carter, III; Bearden, Larry J. Dept. of Pediatrics, University of Alabama in Birmingham, School of Medicine, Birmingham, AL 35233 **Anticonvulsants specific for petit mal antagonize epileptogenic effect of leucine enkephalin.** Science. 210(4473):1031-1033, 1980.

The anticonvulsants ethosuximide, sodium valprovate, and trimethadione, which are specific for petit mal epilepsy, were found to abolish in rats the electrical seizure activity and behavioral abnormalities produced by leucine enkephalin, whereas phenobarbital and phenytoin had no effect. The dose response curve for naloxone against seizure activity induced by leucine enkephalin was the same as that in gamma-hydroxybutyrate-in-

duced petit mal. These data indicate that the epileptic properties of leucine enkephalin are petit-mal-like and raise the possibility of involvement of enkephalinergic systems in petit mal epilepsy. 17 references. (Author abstract)

000478 Snead, O. Carter, III; Bearden, Larry J. 1601 6th Avenue South, Birmingham, AL 35233 **Naloxone overcomes the dopaminergic, EEG, and behavioral effects of gamma-hydroxybutyrate.** Neurology. 30(8):832-838, 1980.

The specific opiate antagonists naloxone and naltrexone were found to attentuate or abolish the electrical seizure activity, behavioral abnormalities, and increase striatal dopamine content produced by gamma-butyrolactone, the prodrug of gamma-hydroxybutyrate. The effects of naloxone and naltrexone were dose dependent. These data suggest that gamma-hydroxybutyric acid exerts its effect by action either at the opiate receptor or on enkephalinergic systems, which may be involved in petit mal epilepsy. 87 references. (Author abstract)

000479 Snell, Diane; Harris, R. Adron. Harris: Dept. of Pharmacology, University of Missouri Medical Center, Columbia, MO 65212 **Impairment of avoidance behavior following short-term ingestion of ethanol, tertiary-butanol, or pentobarbital in mice.** Psychopharmacology. 69(1):53-57, 1980

Acquisition of a shock avoidance task was impaired in male DBA/2J mice tested 1 day after withdrawal from ethanol, tertiary-butanol, or pentobarbital (administered in liquid diets for 7 days). The avoidance deficit was still apparent 8 days after withdrawal from pentobarbital. No relationship was detected between the avoidance deficit and physical dependence. Results suggest that impaired avoidance behavior is a general effect of the CNS depressants and, in the case of ethanol, not due to the production of acetaldehyde. 21 references. (Author abstract modified)

000480 Soubrie, P.; Jobert, A.; Thiebot, M. H. INSERM, 2, rue d'Alesia, F-75014 Paris, France **Differential effects of naloxone against the diazepam-induced release of behavior in rats in three aversive situations.** Psychopharmacology. 69(1):101-105, 1980.

Naloxone suppressed diazepam-induced eating in an unfamiliar situation and reduced spontaneous food intake in male Wistar rats. Naloxone canceled the increased lever-pressing produced by diazepam in a conflict procedure in which one electric shock was deliverd at each seventh press. Naloxone did not reverse the enhanced responding for food induced by diazepam in the presence of a signal previously paired with electric food shocks; in this situation, naloxone alone reinforced the behavioral suppression. Results suggest that opiate peptides are involved in some but not all of the disinhibitory effects of benzodiazepines and may play a role in the control of stress-induced behavioral suppression. 23 references. (Author abstract modified)

000481 Spear, Linda P.; Shalaby, Ismail A.; Brick, John. Dept. of Psychology, State University of New York at Binghamton, Binghamton, NY 13901 **Chronic administration of haloperidol during development: behavioral and psychopharmacological effects.** Psychopharmacology. 70(1):47-58, 1980.

Chronic haloperidol treatment during prenatal and postnatal development was found to induce long-term behavioral and psychopharmacological effects. Rats tested shortly after termination of the chronic treatment at weaning or as young adults were hyperactive in the open-field and exhibited an attenuated behavioral response to amphetamine and an accentuated cataleptic response to later doses of haloperidol, when compared with control offspring of the same age. Tests at an intermediate interval (adolescence period) showed no significant difference from control offspring on any of these behavioral measures. Adult rats administered haloperidol chronically for the same duration were also hyperactive after termination of treatment. In contrast to the effects of haloperidol during development, these adults exhibited an accentuated behavioral response to amphetamine and an attenuated cataleptic response to a latter dose of haloperidol. Compensatory mechanisms in response to chronic haloperidol treatment during development thus appear to be different from those in adulthood. 35 references. (Author abstract)

000482 Spear, Linda Patia. State University of New York, Binghamton, NY 13901 **The use of psychopharmacological procedures to analyse the ontogeny of learning and retention: issues and concerns.** In: Spear, N., Ontogeny of learning and memory. Hillsdale, NJ, Lawrence Erlbaum, 1979. 321 p. (p. 135-156).

Some of the major issues in the field of psychopharmacological investigations of ontogeny are discussed, and considerations for future research are offered. Topics include: ontogenetic behavioral responses to drugs, age related nonmonotonic relationships in the behavioral responses to drugs, paradoxical responses to drugs, drug-induced precocial behaviors, variables that may play a role in the ontogenesis of patterns of drug responsiveness, and additional complexities in attempts to correlate brain development with psychoactive drug responsiveness. 31 references.

000483 Spiteri, Nello J.; Drewett, Robert F.; Padel, Una. Dept. of Zoology, State University of Groningen, Kerklaan 30, 9751 NN HAREN, The Netherlands **Behavioral effects of ethynyl estrogens in the female rat.** Physiology & Behavior. 25(3):409-415, 1980.

The effects of synthetic analogues of estradiol, ethynyl estradiol, and mestranol on food intake and sexual behavior were evaluated in female rats, and compared with those of estradiol. It was found (Experiment 1) that both ethynyl estradiol and mestranol reduce food intake reliably, and more than estradiol. Water intake and body weight followed similar trends. Ethynyl estradiol, but not mestranol, plus progesterone stimulated proceptive and receptive behavior in ovariectomized female rats. Daily administration of ethynyl estrogens without progesterone showed similar trends (Experiment 3). It is suggested that these studies provide guidelines for further work on the effects of synthetic estrogens on subprimate and primate behavior. 30 references. (Author abstract modified)

000484 Stricker, Edward M.; Vagnucci, Anthony H.; McDonald, Robert H., Jr.; Leenen, Frans H. Dept. of Psychology, University of Pittsburgh, Pittsburgh, PA 15260 **Renin and aldosterone secretions during hypovolemia in rats: relation to NaCl intake.** American Journal of Physiology. 237(1):R45-R51, 1979.

Plasma renin activities (PRA) and aldosterone concentrations were found to increase in parallel over a wide range of plasma volume deficits produced in unanesthetized rats by extravascular administration of polyethylene glycol (PEG) solutions. When PEG treated rats were given water to drink, their intakes were proportional to PRA; when given water and 0.5M NaCl, pRA and the steroid concentrations diminished concurrently is association with sodium consumption. Aldosterone concentrations and NaCl intakes were markedly enhanced after PEG treatments in rats maintained on a sodium deficient diet for 4 days. On the other hand, a clear relation between PRA and water intake, and between circulating aldosterone levels and sodium intake, was not suggested by other experiments in this series. For example, bilateral nephrectomy abolished the rise in PRA during hypovolemia yet rats drank water normally. Morevoer, aldosterone concentrations were substantially elevated by PEG treatment in the nephrectomized rats yet sodium appetite was abolished.

These and other findings suggest that neither angiotensin nor aldosterone plays a prominent role in stimulating water and saline intakes during hypovolemia. 34 references. (Author abstract)

000485 Sulcova, A.; Krsiak, M.; Masek, K.; Ostrovskaya, R. U. Dept. of Pharmacology, Faculty of Medicine, University of J. E. Purkynje, Tr. Obrancu miru 10, 662 43 Brno, Czechoslovakia **Bicuculline antagonizes effects of diazepam on aggressive and timid behaviour in mice.** Activitas Nervosa Superior. 21(3):179-180, 1979

The influence of bicuculline, an antagonist of GABA receptors, on the effects of diazepam on aggressive and timid mice was investigated in 51 pairs of singly and group housed male mice. Each isolate mouse was given successively one of four treatments in random order (water, bicuculline, diazepam, or bicuculline plus diazepam), and behavioral interactions between isolate mice and group housed mice were observed. Bicuculline was found to antagonize the inhibition of timid and aggressive activities as well as the stimulation of sociable activities induced by diazepam in mice. Results support the hypothesis that GABA systems are involved in the tranquillizing action of benzodiazepines. 6 references.

000486 Tarnawa, I.; Szekely, J. I. Institute for Drug Research, PO Box 82, H-1325 Budapest, Hungary **Effect of morphine in combination with chlorpromazine and haloperidol on operant behavior.** Pharmacology. 21(3):186-192, 1980.

A discrete trial avoidance escape schedule was used to study the interactions of morphine, chlorpromazine, and haloperidol in male Long-Evans rats. All three drugs disrupted operant behavior. Chlorpromazine and haloperidol potentiated each other's effects at low doses, but antagonism was seen at high doses. No antagonism or synergism was seen when morphine was combined with haloperidol or chlorpromazine. Results indicate that the reflex inibitory action of neuroleptics and morphine are mediated by independent receptor populations. 29 references. (Author abstract modified)

000487 Terry, William S.; Anthony, Sandra G. Dept. of Psychology, University of North Carolina, UNCC Station, Charlotte, NC 28223 **Arousal and short-term memory: effects of caffeine and trial spacing on delayed-alternation performance.** Animal Learning & Behavior. 8(3):368-374, 1980.

Kesner's (1973) prediction, based on the parallel memory/stores theory, that arousal reduces retention in short-term memory was tested in two studies. Using rats, the effects of caffeine on delayed alternation performance in a spatial discrimination was investigated. Trial spacing was also manipulated, both alone and in combination with the drug variable. Results showed that, with massed trials, caffeine facilitated alternation at the short delay and inhibited it at the longer delays tested. Using spaced trials, caffeine decreased alternation at all delays. Spaced trials produced overall superior performance as compared with massed trials. It is suggested that the pattern of results is consistent with the view that caffeine reduces short-term retention but, paradoxically, can also increase performance under massed trials by decreasing proactive interference (i.e., retention) from earlier trials. 29 references. (Author abstract modified)

000488 Thor, D. H. Research Dept., Edward R. Johnstone Training and Research Center, Bordentown, NJ 08505 **Testosterone and persistence of social investigation in laboratory rats.** Journal of Comparative and Physiological Psychology. 94(5):970-976, 1980.

In a series of experiments to measure initial investigatory behavior as it may relate to a theoretical model for persistence in attention, mature male and female rats were individually exposed in their home cages to sexually immature conspecifics. A prominent sex difference was observed in duration of social investigation prior to a criterion of neglect. When pups were 5 days of age, no sex difference was observed, but when pups were 8 days of age and older, mature males consistently investigated them for significantly longer intervals than did mature females. Furthermore, intact males investigated prepubertal conspecifics for significantly longer intervals than did castrated males, castrated females, or intact females; none of the latter three groups differed significantly from each other. Following testosterone treatment, castrated males investigated unfamiliar prepubertal conspecifics for a significantly longer duration than did untreated castrated control animals. The combined results support the conclusion that gonadal testosterone effects a greater perseveration of social investigation in males. 20 references. (Author abstract modified)

000489 Tolpyshev, B. A. Kafedra farmakologii Chitinskogo meditsinskogo inst., Chita, USSR /**The influence of GABAergic substances on the effects of stimulation of the caudate nucleus and amphetamine stereotypy in cats.**/ Vliyaniye GAMK-ergicheskikh veshchestv naeffekty stimulyatsii khvostatogo yadra i fenaminovuyu stereotipiyu u koshek. Farmakologiya i Toksikologiya. 43(2):140-144, 1980.

The influence of GABAergic substances on the effects of stimulation of the caudate nucleus and amphetamine stereotypy in cats was studied in a series of tests on seven cats. Arrest reaction, circling, cortical spindles induced by electrical stimulation of the caudate nucleus, and stereotypic behavior provoked by threshold doses of amphetamine were recorded in these experiments. Sodium hydroxybutyrate and phenibut facilitated motor arrest, while gammalon did not elicit such an effect. All the substances markedly decreased the thresholds of cortical caudate-induced spindles. In contrast to gammalon, sodium hydroxybutyrate and phenibut weakened stereotypic behavior at the same doses of amphetamine that were used in controls, and also interfered with an inhibitory effect of the psychostimulant on the reactions induced by stimulation of the caudate nucleus. It is suggested that the drugs, while potentiating GABAergic transmission, disturb the activity of dopaminergic mechanisms of the neostriatum. 14 references. (Journal abstract modified)

000490 Tombaugh, Tom N.; Anisman, Hymie; Tombaugh, Jo. Dept. of Psychology, Carleton University, Ottawa, Ontario, K1S 5B6, Canada **Extinction and dopamine receptor blockade after intermittent reinforcement training: failure to observe functional equivalence.** Psychopharmacology. 70(1):19-28, 1980.

Response decrements in an operant task produced by either extinction or by the dopamine receptor blocker pimozide were examined in three experiments which employed intermittent reinforcement schedules. In contrast to the congruency between these treatments previously observed following continuous reinforcement training, treatment with pimozide was markedly more effective than extinction in decreasing performance after training with variable interval, and fixed ratio reinforcement. The two treatments also produced substantially different patterns of responding. A shift from extinction to pimozide did not alter the progressive decline in response rate over days, but a shift from pimozide to extinction caused a pronounced increase of performance. These results indicate that the pimozide and extinction treatment did not produce functionally equivalent effects, and that the role of dopamine on reward processes should not be inferred from comparisons between pimozide and extinction. 18 references. (Author abstract modified)

000491 Trulson, Michael E.; Jacobs, Barry L. Dept. of Psychology, Princeton University, Princeton, NJ 08544 **Chronic am-**

phetamine administration to cats: behavioral and neurochemical evidence for decreased central serotonergic function. Journal of Pharmacology and Experimental Therapeutics. 211(2):375-384, 1979.

Chronic administration of amphetamine to cats elicited behaviors that were characteristic of hallucinogenic drug effects and dependent on depression of central serotonergic neurotransmission. The amphetamine treatment also produced large decreases in central serotonin (5-HT) and 5-hydroxyindoleacetic acid levels. These findings and data from two additional experiments suggest that 5-HT is involved in amphetamine psychosis and in schizophrenia. 57 references. (Author abstract modified)

000492 Tyler, Thomas D.; Tessel, Richard E. Tessel: Dept. of Pharmacology and Toxicology, School of Pharmacy, University of Kansas, Lawrence, KS 66044 **Norepinephrine uptake inhibitors as biochemically and behaviorally selective antagonists of the locomotor stimulation induced by indirectly acting sympathomimetic amines in mice.** Psychopharmacology. 69(1):27-34, 1980.

Pretreatment with the selective norepinephrine (NE) uptake inhibitors nosoxetine and desipramine antagonized the locomotor stimulant effect of d-amphetamine without reducing its ability to induce stereotypy in male ICR mice. A similar antagonism was observed with imipramine, but not with fluoxetine, a selective serotonin uptake inhibitor. Nisoxetine selectively reduced the locomotor activity induced by maximally effective doses of cocaine, d-N-ethylamphetamine, and methylphenidate, but not that induced by morphine. Nisoxetine did not directly alter levels of endogenous or radiolabled NE in cerebral cortex, but blocked the selective reduction in cortical NE induced by amphetamine. Results suggest that NE is involved in the locomotor stimulant action of indirectly acting sympathomimetic amines. 32 references. (Author abstract modified)

000493 Uchida, S.; Honda, F.; Otsuka, M.; Satoh, Y.; Mori, J.; Ono, T.; Hitomi, M. Hitomi: Research Labs, Fujisawa Pharmaceutical Co. Ltd., 1-2, 2-Chome, Kashima, Yodogawa-ku, Osaka 532, Japan **Pharmacological study of (2-chloro-11-(2 dimethylaminoethoxy)dibenzo (b,f)thiepine) (zotepine), a new neuroleptic drug.** Arzneimittel-Forschung. 29(10):1588-1594, 1979.

The psychopharmacological effects of zotepine (2-chloro-11-)(2-dimethyl-aminoethoxy)dibenzo(b,f)thiepine), a new neuroleptic drug with a chemical structure different from know neuroleptics, were studied in mice, rats, and dogs, and were compared with those of commercially available neuroleptics. Haloperidol and perphenazine were the most active and thioridazaine was the least active in inhibiting apomorphine-induced gnawing and circling movement, methamphetamine-induced gnawing and circling movement, conditioned avoidance response, motor activity, dopamine-induced pancreatic secretion, and apomorphine-induced vomiting. These drugs also had the same order of potency in inducing catalepsy and increasing dopamine turnover and prolactin release. Chlorpromazine, propericizaine and thiothixene were intermediate in potency. Aotepine equalled chlorpromazine in most activities, however, it was clearly less active than chlorpromazine in potentiation of barbiturate sleep and cardiovascular effect. 11 references. (Author abstract modified)

000494 Urca, Gideon; Frenk, Hanan. Dept. of Physiology and Pharmacology, Tel-Aviv University, Ramat-Aviv, Israel **Pro- and anticonvulsant action of morphine in rats.** Pharmacology Biochemistry and Behavior. 13(3):343-347, 1980.

To investigate the anticonvulsant action of morphine in rats, rats were pretested either with saline or various doses of morphine 30 min before injection. All animals then received pentamethylenetetrazol (PTZ). Morphine, but not naltrexone, showed anticonvulsant action. However, at the most effective anticonvulsant dose, morphine treated animals showed more convulsive seizures than did the saline treated controls. Results are taken as evidence that morphine has both proconvulsant and anticonvulsant properties, depending on the prior occurrence of a PTZ-induced seizure. The possibility that seizures cause increased sensitivity of the organism to morphine is discussed. 18 references. (Author abstract modified)

000495 Wauquier, A.; Van den Broeck, W. A. E.; Janssen, P. A. J. Dept. of Pharmacology, Janssen Pharmaceutica, B-2340 Beerse, Belgium **Biphasic effects of pimozide on sleep-wakefulness in dogs.** Life Sciences. 27(16):1469-1475, 1980.

Sleep/wakefulness patterns in dogs were studied using computerized on-line power spectral analyis and off-line automatic stage classification, during control recordings and after oral treatment with three doses of the specific dopamine blocker pimozide. A biphasic effect on sleep-wakefulness patterns was found. At 0.16mg/kg, pimozide significantly increased the time spent awake, and significantly decreased slow wave sleep and REM sleep. No significant effects were obtained with a four times higher dose of pimozide. At 0.16mg/kg, pimozide significantly decreased the time spent awake and significantly increased slow wave sleep and REM sleep. The effects appear the opposite of those described for apomorphine and suggest that dopamine plays a role in the physiology of sleep-wakefulness regulation. 19 references. (Author abstract modified)

000496 Wauquier, Albert; Ashton, David; Melis, William. Dept. of Pharmacology, Janssen Pharmaceutica Research Laboratories, B-2340 Beerse, Belgium **Behavioral analysis of amygdaloid kindling in beagle dogs and the effects of clonazepam, diazepam, phenobarbital, diphenylhydantoin, and flunarizine on seizure manifestation.** Experimental Neurology. 64(3):579-586, 1979.

The effects of clonazepam, diazepam, phenobarbital, diphenylhydantoin, and flunarizine on amygdaloid kindled seizures in dogs were studied. Diazepam (2.5mg/kg) and phenobarbital (10mg/kg) inhibited the convulsions and associated phenomena in all animals. Clonazepam (0.63mg/kg) and flunarizine (5mg/kg) protected two of three dogs against tonic and clonic seizures, but did not prevent facial clonus. Diphenylhydantoin was ineffective in doses up to 40mg/kg. 15 references. (Author abstract modified)

000497 Weeks, James R.; Collins, R. James. Upjohn Co., 7222-25-10, Kalamazoo, MI 49001 **Dose and physical dependence as factors in the self-administration of morphine by rats.** Psychopharmacology. 65(2):171-177, 1979.

The roles of dose and physical dependence in the self-administration of morphine by rats were investigated. Groups of naive rats were offered morphine sulfate for self-administration in doses of 0.0032-10mg/kg for 6 days. On day 7 saline was substituted for morphine. Loss of weight was taken as physiological evidence of dependence. Rats that did not lose weight formed a single population whose mean injection rate did not differ from control rats receiving only saline injections. Injection rates for rats losing weight were log normally distributed, and the mean of the logarithms of the injection rates was linearly related to the logarithm of the dose. Mean daily injection rates averaged 12 for controls, 23 at 10mg/kg, and 411 at 0.01mg/kg. A transient increase in morphine intake after an injection of nalorphine was taken as behavioral evidence of dependence. Nalorphine increased morphine intake when rats were self-injecting 0.32 and 1.0mg/kg of morphine, but not 0.032 or 0.1mg/kg. The reinforcing property of morphine may occur without behavioral evidence of dependence. 24 references. (Author abstract modified)

000498 Weiner, William J.; Goetz, Christopher G.; Nausieda, Paul A.; Klawans, Harold L. Dept. of Neurological Sciences, Rush-Presbyterian-St. Luke's Medical Center, 1725 West Harrison St., Chicago, IL 60612 **Amphetamine-induced hypersensitivity in guinea pigs.** Neurology. 29(7):1054-1057, 1979.

After 6 months of daily d-amphetamine treatment, white male guinea-pigs demonstrated behavioral hypersensitivity and decreased latency to onset of amphetamine-induced stereotypy. However, the distribution and brain levels of d-amphetamine in chronically treated animals did not differ from those in animals treated acutely with d-amphetamine. Animals pretreated chronically with d-amphetamine were also hypersensitive to apomorphine, a dopaminergic agonist whose metabolic pathway is distinct from that of amphetamine. Results suggest that the hypersensitivity seen after chronic amphetamine exposure is not due to altered amphetamine metabolism. 14 references. (Author abstract modified)

000499 White, Francis J.; Simmons, Mark A.; West, Kenneth B.; Holohean, Alice M.; Appel, James B. Behavioral Pharmacology Laboratory, Dept. of Psychology, University of South Carolina, Columbia, SC 29208 **The effect of serotonin depletion on the discriminability of LSD.** Pharmacology Biochemistry and Behavior. 13(4):569-574, 1980.

Male Sprague-Dawley rats trained to discriminate d-lysergic acid diethylamide (LSD, 0.12mg/kg) from saline in a two lever, water reinforced drug discrimination procedure were given intraventricular injections of 5,7-dihydroxytryptamine (5,7-DHT), i.p. injections of p-chlorophenylalanine (PCPA), or i.p. injections of p-chloroamphetamine. All three treatments caused a significant depletion of 5-hydroxytryptamine (5-HT), but only PCPA and the highest dose of 5,7-DHT (200mcg) significantly potentiated LSD appropriate responding at a 0.03mg/kg dose of LSD. There was no significant correlation between the degree of 5-HT depletion and percent LSD responding. Results indicate that 5-HT depletion per se cannot account for supersensitivity to the behavioral effects of LSD. 48 references. (Author abstract modified)

000500 Widy-Tyszkiewicz, Ewa; Sourkes, Theodore L. Sourkes: Dept. of Psychiatry, McGill University, 1033 Pine Ave. West, Montreal, Quebec, Canada H3A 1A1 **n-Pentylamine: effect on motor activity of mice.** Pharmacology Biochemistry and Behavior. 13(3):385-390, 1980.

Motor and autotnomic effects of n-pentylamine in mice were evaluated in relation to aminergic mechanisms by combining administration of the amine with drugs having well known effects on such mechanisms. Some evidence is reported which indicates the importance of dopaminergic pathways in the actions of pentylamine. These actions are modifiable by central blockade of muscarinic receptors with atropine. Serotonin regulated pathways do not seem important for the effects of pentylamine that have been studied. 33 references. (Author abstract)

000501 Willner, Paul; Montgomery, Tony. Dept. of Psychology, City of London Polytechnic, Old Castle Street, London E1 7NT, England **Attenuation of amphetamine anorexia in rats following subchronic treatment with a tricyclic antidepressant.** Communications in Psychopharmacology. 4(2):101-106, 1980.

Food intake following amphetamine (DEX) administration was studied in groups of rats during and after subchronic treatment with the tricyclic antidepressant desmethylimipramine (DMI). The anorexic response to DEX was unchanged during DMI administration, but attenuated for a period of weeks following the cessation of DMI treatment. 12 references. (Author abstract)

000502 Winter, Charles A.; Kling, Paul J.; Tocco, Dominick J.; Tanabe, Kenzaburo. Merck Institute for Therapeutic Research, West Point, PA 19486 **Analgesic activity of diflunisal (MK-647; 5-(2,4-difluorophenyl)salicylic acid) in rats with hyperalgesia induced by Freund's adjuvant.** Journal of Pharmacology and Experimental Therapeutics. 211(3):678-685, 1979.

Diflunisal showed analgesic activity in rats with hyperalgesia induced by injection of Freund's adjuvant into the tail. After oral administration, diflunisal was 25 times more potent than aspirin, three times more potent than glafenine, and twice as potent as zomepirac. Repeated administration of large doses produced neither tolerance nor sensitization to the analgesic action of diflunisal. The action of diflunisal was not antagonized by naloxone or naltrexone, but was enhanced by morphine. 34 references. (Author abstract modified)

000503 Yamamoto, Bryan K.; Kutscher, Charles L. Psychology Research Laboratory, Syracuse University, Syracuse, NY 13210 **Using profiles of saccharin and water drinking to detect and discriminate actions of drugs and toxicants.** Pharmacology Biochemistry and Behavior. 13(4):507-512, 1980.

Patterns of saccharin and water drinking were studied in male Long-Evans rats treated chronically or acutely with drugs and toxicants. In rats naive for the saccharin solution, a single injection of lithium chloride (LiCl) or 2-deoxyglucose (2-DG) produced persistent saccharin aversion, but hypertonic sodium chloride (NaCl) produced only a transient saccharin aversion. In rats previously exposed to saccharin, 2-DG and hypertonic NaCl produced an increase in saccharin drinking, but LiCl had no effect. Chronic administration of 2-DG, LiCl, or lead to saccharin experienced rats led to the gradual development of saccharin aversion and qualitatively changes in patterns of saccharin and water drinking. Saccharin preference was not altered by chronic administration of hypertonic NaCl or insulin or by chronic food deprivation. 13 references. (Author abstract modified)

000504 Yoshimura, Hiroyuki. Dept. of Pharmacology, School of Medicine, Ehime University, Ehime, 791-02, Japan **Cholinergic mechanisms in scent marking behavior by Mongolian gerbils (Meriones unguiculatus).** Pharmacology Biochemistry and Behavior. 13(4):519-523, 1980.

The frequency of scent marking was higher in Mongolian gerbils reared in isolation than in aggregated gerbils. Marking behavior was suppressed by scopolamine (1.5mg/kg i.p.), but not by methylscopolamine. Acetylcholinesterase and choline acetyltransferase activities in eight discrete brain regions did not differ between isolated and aggregated animals. It is suggested that neural events such as changes in acetylcholine turnover or release may be involved in scent marking behavior. 34 references. (Author abstract modified)

000505 Young, Gerald A.; Steinfels, George F.; Khazan, Naim. Dept. of Pharmacology and Toxicology, University of Maryland School of Pharmacy, 636 W. Lombard St., Baltimore, MD 21201 **Pharmacodynamic profiles of l-alpha-acetylmethadol (LAAM) and its N-demethylated metabolites, nor-LAAM and dinor-LAAM, during self-administration in the dependent rat.** Journal of Pharmacology and Experimental Therapeutics. 210(3):453-457, 1979.

Female Sprague-Dawley rats self-administered l-alpha-cetylmethadol (LAAM), nor-LAAM, and dinor-LAAM at doses of 0.5, 1, and 2mg/kg/injection. For all three narcotics, mean number of self-injections decreased and mean total drug intake increased as a function of dose increases. All three drugs suppressed REM sleep, but the pattern of sleep differed for each drug. LAAM caused the least and nor-LAAM the most behav-

ioral disruption while sustaining dependence. 38 references. (Author abstract modified)

000506 Zalesov, V. S.; Bargteyl, B. A.; Fridman, A. L.; Kolobov, N. A.; Zalesov, V. V.; Kon'shina, L. O.; Morozova, G. E.; Platonova, Z. V. Kafedra farmakologii Permskogo farmatsevticheskogo inst., Perm, USSR **/The tranquilizing action of adamantane derivatives./** Trankviliziruyushchaya aktivnost' proizvodnykh adamantana. Farmakologiya i Toksikologiya. 43(2):158-161, 1980.

The tranquilizing activity of adamantane derivatives was studied in experiments on mice and rats. The high toxicity, the anticorazol action, the effect on the duration of hexenal narcosis, the orientation reflex, and the muscle relaxant action of the compounds were studied using mongrel mice of both sexes weighing 16 to 20 grams. The effect on simple conditioned defense reflexes and spontaneous motor activity was studied using mongrel rats weighing 150 to 180 grams. Results show that 13 adamantane derivatives have a greater tranquilizing activity than amantadine, that 3-bromadamantoyl-l diazomethane exerts a stronger effect than trioxazine, and that two adamantane derivatives possess anticonvulsant activity. 26 references. (Journal abstract modified)

000507 Zetler, Gerhard. Institut fur Pharmakologie der Medizinischen Hochschule Lubeck, Ratzeburger Allee 160, D-2400 Lubeck, Germany **Effects of cholecystokinin-like peptides on rearing activity and hexobarbital-induced sleep.** European Journal of Pharmacology. 66(1):137-139, 1980.

Subcutaneous injection of caerulein and the C-terminal peptide of cholecystokinin (CCK-8) inhibited spontaneous rearing activity and prolonged hexobarbital sleeping time in male NMRI mice. These effects were not altered by naloxone. In molar terms, caerulein was 40 times more potent than diazepam in potentiating hexobarbital and 115 times more potent in inhibiting rearing. CCK-8 was less active than caerulein but more potent than diazepam. 4 references. (Author abstract modified)

000508 Zuccarelli, Richard R.; Barrett, James E. Barrett: Dept. of Psychiatry, School of Medicine, USUHS, 4301 Jones Bridge Road, Bethesda, MD 20014 **A comparison of the effects of d-amphetamine, cocaine, imipramine and pentobarbital on local and overall rates of responding maintained under a four-component multiple fixed-interval schedule.** Pharmacology Biochemistry and Behavior. 12(6):899-907, 1980.

The effects of d-amphetamine, cocaine, imipramine, and pentobarbital on local and overall rates of responding maintained under a four component multiple fixed-interval schedule were compared. Key pecking of pigeons was maintained under a four component multiple fixed-interval schedule with values of 1 min, 3 min, 5 min, and 10 min. Each schedule value was correlated with a different key color, each of which controlled distinctively different performances. This schedule generated a range of response rates both within and across the different interval components that permitted a direct comparison of drug effects on local and overall rates of responding. d-Amphetamine, cocaine, imipramine, and pentobarbital all increased low local response rates at doses that did not affect or decreased higher rates within each fixed-interval. Similar effects were obtained when different overall rates of responding were analyzed except that imipramine and pentobarbital also increased the highest overall rates occurring under the 1 min schedule. 22 references. (Author abstract modified)

05 TOXICOLOGY AND SIDE EFFECTS

000509 Amochaev, A.; Johnson, R. C.; Salamy, A.; Shah, S. N. Shah: Sonoma State Hospital, Eldridge, CA 95431 **Brain stem auditory evoked potentials and myelin changes in triethyltin-induced edema in young adult rats.** Experimental Neurology. 66(3):629-635, 1979.

White matter edema induced by triethyltin (TET) intoxication in female Sprague-Dawley rats was associated with a large decrease in myelin content in the CNS and a significant increase in peak latencies of all brainstem auditory evoked potentials. The potential latencies and CNS myelin content returned to normal within 2 weeks when TET treatment was discontinued. Results suggest that brainstem auditory evoked potential latencies may serve as a noninvasive measure of myelin defect. 15 references. (Author abstract modified)

000510 Anandam, Nirmala; Felegi, William; Stern, Judith M. Dept. of Psychology, Rutgers University, New Brunswick, NJ 08903 **In utero alcohol heightens juvenile reactivity.** Pharmacology Biochemistry and Behavior. 13(4):531-535, 1980.

A laboratory model of the fetal alcohol syndrome was used to study the behavioral teratogenicity of ethanol. Offspring of female Sprague-Dawley rats intubated with ethanol (4g/kg) twice daily did not differ from offspring of rats intubated with sucrose or untreated rats in neonatal body weight or developmental measures. However, when tested on postnatal day 35, pups from the ethanol group showed heightened acoustic startle reactivity in the absence of hyperactivity or disrupted habituation. 40 references. (Author abstract modified)

000511 Bardo, Michael Thomas. Iowa State University **Morphine treatment at different infant ages: influence on later morphine effects in rats. (Ph.D. dissertation).** Dissertation Abstracts International. 41(3):1153-B, 1980. Ann Arbor, Univ. Microfilms No. 8019622, 76p., 1980.

Possible age-related changes in tolerance to morphine-induced analgesic, hypoactive, and hyperthermic effects during the first 15 days of life in rats were examined. Rats treated with morphine 1 day after birth subsequently displayed tolerance to morphine-induced analgesic and hypoactive effects, but not to hyperthermic effects. Infant saline treated animals displayed less activity and higher body temperatures than infant untreated animals. The results indicated that single dose tolerance to morphine in infants is age dependent inasmuch as animals treated at day 5, 9, or 13 did not show these effects. It is also suggested that saline injection in infancy may produce stress related changes in later pain responsibility, activity, and body temperature. (Journal abstract modified)

000512 Brannan, M. D.; Riggs, J. J.; Hageman, W. E.; Pruss, T. P. Dept. of Pharmacological Research, McNeil Laboratories, Fort Washington, PA 19034 **A comparison of the cardiovascular effects of haloperidol, thioridazine and chlorpromazine HCl.** Archives Internationales de Pharmacodyanmie et de Therapie. 244(1):48-57, 1980.

The effects of haloperidol, thioridazine and chlorpromazine HCl on alpha-adrenergic receptors, mean aortic pressure, myocardial contractile force and myocardial electrophysiology in anesthetized dogs were investigated. Results indicate that, on a milligram basis, chlorpromazine HCl was equipotent to haloperidol, and thioridazine was 0.5 times as potent as haloperidol as an alpha-adrenergic receptor blocker and as a myocardial depressant. Each compound induced conduction nonhomogeneity in myocardial conducting tissue. However, as a neuroleptic, when tested in dogs, haloperidol was 50 times more potent than chlorpromazine HCl and 180 times more potent than thioridazine. Because of differences in neuroleptic potency, therapeutic doses of haloperidol are less likely to cause adverse cardiovascular effects than are those of either chlopromazine HCl or thioridazine. 9 references. (Author abstract modified)

000513 Charlebois, A. T.; Fried, P. A. Fried: Dept. of Psychology, Carleton University, Ottawa, Ontario, Canada **Interactive effects of nutrition and cannabis upon rat perinatal development.** Developmental Psychobiology. 13(6):591-605, 1980.

In order to examine the effects of cannabinoids, malnutrition, and their possible interaction upon the developing fetus, female Wistar rats were exposed to cannabis smoke, placebo smoke, or no smoke while concurrently consuming one of three diets differing in protein concentrations (8%, 24%, 64%). Both the diet and the drug treatments were administered 20 days prior to and throughout gestation. Of the 12 variables affected by the low protein diet, eight were significantly potentiated when undernutrition was combined with cannabis smoke. Some dependent variables that were not altered either by low protein diet or by cannabis inhalation were affected by the combination of treatments. These included a lengthened gestation period, an increase in occurrence of stillbirths and litter destruction, and decreased activity in rat pups. Cannabis coupled with a standard protein diet resulted in a number of developmental indices being delayed, but combining the drug with an enriched protein diet ameliorated these effects. The evidence also suggests that the administration of cannabis both before and during gestation resulted in a degree of tolerance to some aspects of the drug's effects. 72 references. (Author abstract)

000514 Corwin, Hal; DeMyer, William. DeMyer: Dept. of Neurology, Indiana University School of Medicine, 1100 West Michigan Street, Indianapolis, IN 46223 **Failure of clorazepate to cause malformations or fetal wastage in the rat.** Archives of Neurology. 37(6):347-349, 1980.

Clorazepate dipotassium (Tranxene), an anticonvulsant benzodiazepine, was tested for teratogenicity by injecting 10 pregnant Long-Evans rats with 32mg/kg on days 8.5, 9.5, and 10.5 of gestation. Ten control rats similarly received sterile water injections. Sixty fetuses recovered after killing five of the mothers on day 20.5 of gestation were sectioned to ascertain external and visceral malformations. Comparison with 55 control fetuses showed no statistically significant differences in external, visceral, or skeletal malformations, nor in fetal mortality, fetal and placental weight, and crown/rump length. Five clorazepate treated rat mothers were allowed to deliver their 45 offspring for a companion study of possible behavioral effects. None of these additional 45 clorazepate treated rats showed external malformations. Thus, clorazepate caused no gross malformations in these rats. 19 references. (Author abstract modified)

000515 Fukuhara, K.; Emi, Y.; Furukawa, T.; Fujii, T.; Iwanami, K.; Watanabe, N.; Isubura, Y. Watanabe: Research Laboratories, Fujisawa Pharmaceutical Co. Ltd., 1-6, 2-Chome, Kashima, Yodogawa-Ku, Osaka 532, Japan **Toxicological and teratological studies of 2-chloro-11-(2-dimethylaminoethoxy) dibenzo(b,f)thiepine (Zotepine), a new neuroleptic drug.** Arzneimittel-Forschung. 29(10):1600-1606, 1979.

Toxicological and teratological studies of 2-chloro-11-(2-dimethylaminoethoxy)dibenzo(b,f)thiepine (zotepine) performed in mice, rats, rabbits, and dogs are described. The very small differences in toxicity among species and between routes (iv and oral) suggests the good absorption of zotepine from the gastrointestinal tract. In the subacute and chronic toxicity studies in rats, significant changes attributed to the drug were impairment of growth, alveolar proliferation in the mammary gland, decrease in uterine weight, and increased number of diestrous rats. In the subacute and chronic toxicity studies in dogs, abnormal quietness and abnormal gait occurred. In the teratological studies, zotepine had no adverse effects on pregnant animals the fetuses in rats and rabbits, nor reproductive performance of the F1 rats. 9 references. (Author abstract modified)

000516 Goode, P. G.; Rhodes, K. F.; Waterfall, J. F. Rhodes: Wyeth Institute of Medical Research, Huntercombe Lane South, Taplow, Maidenhead, Berks SL6 0PH, England **The analgesic and respiratory effects of meptazinol, morphine and pentazocine in the rat.** Journal of Pharmacy and Pharmacology. 31(11):793-795, 1979.

The analgesic potency and respiratory depressant effects of meptazinol, morphine, and pentazocine were compared following i.v. administration to conscious female albino rats. A 50% response in the tail flick test was observed with 3.4mg/kg meptazinol, 10.9mg/kg pentazocine, or 1.0mg/kg morphine. Morphine produced significant respiratory depression at 2 or 4mg/kg, but meptazinol and pentazocine had no significant depressant effects at 8 or 16mg/kg. Pentazocine produced convulsions and marked increases in respiratory frequency at both dose levels. 8 references.

000517 Goodwin, Peggy J.; Perez, Vernon J.; Eatwell, John C.; Palet, James L.; Jaworski, Michael T. Perez: Dept. of Psychology, Texas Tech University, Lubbock, TX 79409 **Phencyclidine: effects of chronic administration in the female mouse on gestation, maternal behavior, and the neonates.** Psychopharmacology. 69(1):63-67, 1980.

Daily administration of phencyclidine (PCP, 5mg/kg) to female Swiss mice throughout pregnancy did not affect prenatal weight gain, length of parturition, or size and birthweight of litters. No congenital malformations were evident and physical and neurological development of the pups was normal. The PCP treated pups were slightly more active than controls when tested in the open field at 60 days of age. PCP did not affect maternal behavior or health. 20 references. (Author abstract modified)

000518 Grissette, Don E.; Stewart, Sara E.; Coker, Samuel T.; Davidson, Priscilla P.; Williams, Byron B. Division of Pharmacology and Toxicology, Dept. of Pharmacal Sciences, Auburn University School of Pharmacy, Auburn, Al 36849 **Biologic interaction of gamma radiation with phenylbutazone, phenytoin, or hydralazine.** Research Communications in Chemical Pathology and Pharmacology. 29(3):589-597, 1980.

Lethality in male Swiss mice treated with phenylbutazone (7mg/kg for 2 weeks) or phenytoin (20mg/kg for 4 weeks) combined with acute exposure to gamma radiation (696 REM) was much greater than that observed in mice treated with either drug or radiation alone. However, lethality in mice treated with hydralazine (10mg/kg for 4 weeks) and gamma radiation was not different than that observed in mice treated with the drug or radiation alone. Liver glutathione and leucocyte counts were reduced in mice receiving combined drug/radiation treatments. 6 references. (Author abstract modified)

000519 Hackett, Robert Bruce. University of Mississippi **Toxicologic and pharmacologic effects of phencyclidine HCl in the dog. (Ph.D. dissertation).** Dissertation Abstracts International. 41(3):913-B, 1980. Ann Arbor, Univ. Microfilms No. 8018829, 140p., 1980.

The toxicologic and pharmacologic effects of phencyclidine HCl (PCP) were examined with 22 mongrel dogs. All animals experienced tonic clonic convulsions which lasted until shortly before death. Studies involving the peripheral administration of PCP indicate that lethality is due to two principle actions of the drug: in nonrespired animals death is associated with primary respiratory failure exacerbated by hyperthermia, in respired animals death appears to be the result of primary cardiac failure and concomitant cardiovascular shock. The central effects of PCP on respiration are mediated primarily via an adrenergic pathway whereas the effects on the cardiovascular parameters

are mediated primarily via adrenergic and dopaminergic pathways. (Journal abstract modified)

000520 Iijima, T.; Philippu, A. Philippu: Institut fur Pharmakologie und Toxikologie, Universitat Wurzburg, Versbacher Strasse 9, D-8700 Wurzburg, West Germany **Failure of isoprenaline and beta-receptor blocking drugs to modify depressor response and bradycardia induced by electrical stimulation of the anterior hypothalamus of cats.** Naunyn-Schmiedeberg's Archives of Pharmacology. 312(1):27-30, 1980.

Beta-adrenoceptors in the anterior hypothalamus did not appear to be involved in the depressor response and bradycardia elicited by hypothalamic stimulation in cats. Superfusion of the anterior hypothalamus with isoprenaline, atenolol, or butoxamine did not modify the depressor response or bradycardia induced by electrical stimulation of the hypothalamus. Both responses were significantly suppressed by racemic propranolol, but ()-propranolol had the same effect. Resting systemic blood pressure and heartrate were not significantly altered by any of the drugs tested. 16 references. (Author abstract modified)

000521 Jackson, Valerie Pascuzzi; DeMyer, William; Hingtgen, Joseph. DeMyer: Dept. of Neurology, Indiana University School of Medicine, 1100 West Michigan Street, Indianapolis, IN 46223 **Delayed maze-learning in rats after prenatal exposure to clorazepate.** Archives of Neurology. 37(6):350-351, 1980.

The effects of in utero exposure to clorazepate dipotassium, an anticonvulsant benzodiazepine, on maze learning was investigated in offspring of rats receiving 32mg/kg Tranxene on gestational days 8.5, 9.5, and 10.5. The control group of offspring (n=19) and the experimental group (n=20) were compared by means of a timetable for neurologic development and for maze learning ability. Although the experimental group was significantly slower in stomach lifting and walking, the neurologic battery as a whole did not disclose any consistent difference. At 21 days of age, the experimenal rats weighed significantly more than the control rats. The control rats learned the maze significantly faster than the experimental rats. On trials 10 to 14, the control group ran the maze in less than half of the time of the experimental group. Results emphasize the need to include tests of cerebral function in addition to developmental reflexes to screen for subtle effects of teratogens, which the simpler developmental test may miss. 12 references. (Author abstract modified)

000522 Kakita, Kiyohito; Kuriyama, Kinya. Dept. of Pharmacology, Kyoto Prefectural University of Medicine, Kamikyo-ku, Kyoto 602, Japan **Cholera toxin induced epileptogenic focus -- special reference to cyclic AMP metabolism and epileptogenic focus.** Brain and Nerve. 31(11):1129-1136, 1979.

The role of adenosine 3',5'-monophosphate (cyclic AMP, cAMP) metabolism in the establishment of epileptogenic focus was examined using a cholera-toxin-induced animal model. Cholera toxin, administered to the amygdaloid complex, induced epilepsy-like convulsive seizures in the rat, accompanied by bilateral rhythmic spike discharges, from 8 to 48 hr postinjection. Abnormal behaviors including running, jumping, vocalizations, rearing, facial twitching, aggressive behavior, and increased salivation were observed; and high voltage spikes were intermittently observed with generalized convulsive seizures. cAMP content, as well as adenylate cyclase activity in the ipsilateral amygdaloid complex, was significantly increased during preconvulsive and convulsive states. Administration of dibutryryl cAMP through cannula in the amygdaloid-complex-induced behavioral and electroencephalographic abnormalities similar to those found in the cholera toxin treated animals. Results suggest that cAMP and/or cAMP dependent neuronal mechanisms play a significant role in the establishment of epiletogenic focus. Possible psychopharmacological applications of this animal model in the study of anticonvulsant drugs are suggested. 30 references. (Author abstract modified)

000523 Messiha, F. S. Dept. of Pathology, Texas Tech University School of Medicine, Lubbock, TX 79409 **Biochemical studies after chronic administration of neuroleptics to monkeys.** In: Fann, W., Tardive dyskinesia. New York, SP Medical and Scientific Books, 1980. 531 p. (p. 13-25).

The effects of chronic administration of chlorpromazine (CPZ) on the neurological status of the monkey were investigated, along with the possible relationship between alterations of biogenic amines and their metabolites to the dyskinetic manifestations. The results suggest that: 1) drug-induced changes in neurological states are associated with an increase in amounts of DOPAC, HVA, the major metabolites of DA, and 5HIAA in the CSF as well as in urinary excretion of DA, 3MT, and NE; and 3) subchronic administrations do not produce alteration in these monoamines and their metabolites. It is concluded that increased turnover rates of 5HT and DA are associated with the dyskinetic manifestation produced by chronic CPZ treatment in monkeys. The findings have implications for clinical studies of neuroleptic produced tardive dyskinesia observed in psychiatric patients, especially schizophrenics and patients with related disorders. 64 references.

000524 Minchin, Rodney F.; Madsen, Barry W.; Ilett, Kenneth F. Dept. of Pharmacology, University of Western Australia, Nedlands, Western Australia, 6009 **Effect of desmethylimipramine on the kinetics of chlorphentermine accumulation in isolated perfused rat lung.** Journal of Pharmacology and Experimental Therapeutics. 211(3):514-518, 1979.

The effect of desmethylimipramine (DMI) on the kinetics of chlorphentermine accumulation in the isolated perfused male Wistar rat lung were examined. DMI had little effect on the nonsaturable component of chlorphentermine uptake but markedly affected the larger, saturable component. The initial velocity of uptake decreased and the negative rate of change of uptake increased with increased DMI concentration. 28 references. (Author abstract modified)

000525 Petit, Ted L.; LeBoutillier, Janelle C. Dept. of Psychology, University of Toronto, West Hill, Ontario M1C 1A4, Canada **Effects of lead exposure during development on neocortical dendritic and synaptic structure.** Experimental Neurology. 64(3):482-492, 1979.

Long-Evans rats exposed to lead during development had a 13.2% reduction in whole brain weight and a 13.9% reduction in neocortical thickness. The development of the dendritic tree of layer-V giant pyramidal cells and the number of neocortical synapses were also reduced. No changes in synaptic dimensions were detected. 33 references. (Author abstract modified)

000526 Rosenberg, Howard C. Dept. of Pharmacology and Therapeutics, Medical College of Ohio, Toledo, OH 43699 **Central excitatory actions of flurazepam.** Pharmacology Biochemistry and Behavior. 13(3):415-420, 1980.

The central excitatory actions of high doses of flurazepam (FZP) were studied in cats, mice, and rats. The toxic central excitation was most clearly seen as clonic convulsions, superimposed on general depression. Following in lethal dose, death was always associated with convulsions. Comparing the relative sensitivity to central depression and excitation revealed that rats were least likely to have convulsions at doses that did not first cause loss of consciousness, while cats most clearly showed marked central excitatory actions. Signs of FZP toxicity in cats

included excessive salivation, extreme apprehensive behavior, retching, muscle tremors and convulsions. When pretreated with FZP and challenged with pentylenetetrazol (PTZ), lower doses protected against convulsions and death while higher doses produced convulsions. These doses of FZP were lower than those that would have caused convulsions alone. It is noted that these results may be relevant to the use of FZP in clinical situations in which there is increased neural excitability, such as epilepsy or sedative hypnotic drug withdrawal. 19 references. (Author abstract modified)

000527 Savolainen, H.; Zitting, A. Dept. of Industrial Hygiene and Toxicology, Institute of Occupational Health, Haartmaninkatu 1, SF-00290 Helsinki 29, Finland **Glial cell effects of subacute formic acid vapour exposure.** Acta Pharmacologica et Toxicologica. 47(3):239-240, 1980.

Glial cell fractions were isolated from the cerebral hemispheres of male Wistar rats exposed to 20ppm formic acid 6 hours a day, 5 days a week, for 2 or 3 weeks. Acid proteinase activity increased above control range during the third week of exposure, while 2',3'-cyclic nucleotide 3'-phosphohydrolase activity decreased. Glutathione peroxidase activity was below control levels initially, whereas dehydrogenase tended to be higher than control throughout the experiment. 9 references.

000528 Smith, Peter R. A.R.C. Institute of Animal Physiology, Babraham, Cambridge CB2 4AT, England **The effect of cismethrin on the rat dorsal root potentials.** European Journal of Pharmacology. 66(1):125-128, 1980.

Cismethrin, a synthetic pyrethroid insecticide, enhanced the dorsal root potential (DRP) recorded from anesthetized rats to 142% of control values. Bicuculline, a GABA antagonist, reduced the amplitude of the DRP to 67% of control value. Results suggest that the convulsions associated with cismethrin poisoning are not produced by an antagonism of GABA mediated inhibitory transmission. 10 references. (Author abstract modified)

000529 Waller, Donald P.; Katz, Norman L.; Morris, Ralph W. Dept. of Pharmacognosy and Pharmacology, College of Pharmacy, University of Illinois at the Medical Center, Chicago, IL 60612 **Potentiation of lethality in mice by combinations of pentazocine and tripelennamine.** Clinical Toxicology. 16(1):17-23, 1980.

The effect on lethality on pentazocine-tripelennamine combinations in mice were studied. This drug combination is purported to be a cheap and effective substitute for heroin among street addicts. The behavior of mice injected with this combination was different from that manifested when either drug was given alone. The animals injected with pentazocine alone became sedated but developed intermittent clonic seizures and death appeared to result from respiratory depression. Lethal doses of tripelennamine precipitated severe clonic-tonic seizures before death. When the drugs were given concurrently the mice demonstrated exaggerated behavioral responses. Death usually followed 10 to 15 min after drug injection; however, mice that survived demonstrated a postconvulsive depressed state and exhibited slow labored respiration for 2 to 4 hr after drug injection. The data demonstrate that the lethality of combinations of pentazocine and tripelennamine was potentiated in mice relative to either drug administered alone. 15 references.

06 METHODS DEVELOPMENT

000530 Coambs, R. B.; Alexander, B. K.; Davis, C. M.; Hadaway, P. F.; Tressel, W. R. Dept. of Psychology, Simon Fraser University, Burnaby, British Columbia, Canada V5A 1S6 **A drug dispenser to measure individual drinking in rat colonies.** Pharmacology Biochemistry and Behavior. 13(4):593-595, 1980.

An automated device for measuring oral drug consumption by individual rats housed in a colony with a common drinking source is described. Fluids are available in two small pools at the end of a plexiglass runway. Entry into the runway triggers a video system that records the rat's identifying dye mark as well as its subsequent consumption of liquids. Data for 24 hours can be collected on a 1 hour videotape. 2 references. (Author abstract modified)

000531 Iversen, S. D. Dept. of Experimental Psychology, Downing Street, University of Cambridge, Cambridge, England **Animal models of anxiety and benzodiazepine actions.** Arzneimittel-Forschung. 30(5a):862-868, 1980.

The development of animal models of anxiety which are appropriate for investigation of the mechanism(s) of benzodiazepine actions is reviewed. It is noted that the Geller/Seifter procedure (involving electric shock following food delivery) has figured prominently in behavioral studies of benzodiazepines and in the efforts to determine the neuropharmacological basis of their anxiolytic action. This procedure, however, is a time consuming and difficult behavioral baseline to work with. The importance of devising equally specific but simpler animal models of anxiety is emphasized. Tests involving the manipulation of novelty and uncertainty are reviewed, and the responsiveness of these measures to anxiolytic drugs and neuropharmacological manipulation is discussed. It is concluded that simple and reliable animal tests of anxiety using more biologically relevant events than electroshock are needed for the exploration of the functional importance of the benzodiazepine receptors of brain. 44 references. (Author abstract modified)

000532 Kubos, Kenneth Leo. University of Chicago **Drug and seizure identification by audio spectrometry. (Ph.D. dissertation).** Dissertation Abstracts International. 41(3):1155-B, 1980. (Not available from Univ. Microfilms), 1980.

The methodological question of whether audio data collected from the floor upon which mice walked could be used to identify drug/dosage and tremor type was examined with male Swiss-Webster mice injected with various doses of metrazol, LSD-25, amphetamine, methamphetamine, cocaine, morphine or levorphanol and placed in a cage whose floor was fitted with a piezoelectric transducer. Transducer derived audio output was processed to yield power spectrum densities (PSD) composed of ten major peaks. Levels of these ten PSD peaks were found to differentiate accurately between drug/dosage groups as well as between clonic and tonic seizures. It is concluded that this technique may find application in the elucidation of seizure mechanisms, psychomotor disturbances, pharmaceutical screening and neuropharmacological mechanisms. Coupling of ultrasonic and PSD techniques is recommended for future research. (Journal abstract modified)

000533 Monaco, Francesco; Piredda, Salvatore. Clinica Neurologica, Viale S. Pietro 10, I-07100 Sassari, Italy **Carbamazepine-10,11-epoxide determined by EMIT carbamazepine reagent.** Epilepsia. 21(5):475-477, 1980.

Carbamazepine-10,11-epoxide (CBZ-OX) was determined in physiological solutions by means of EMIT carbamazepine reagent. It was recognized as 12% to 20% of the total amount, the cross-reaction being higher at lower CBZ-OX concentrations. A correction for CBZ-OX is necessary when one wants to correlate EMIT carbamazepine values with gas-liquid chromatography values. However, this correction is relevant only for body fluids other than plasma, since the unbound fraction of

CBZ-OX would greatly influence the ultrafiltrate serum ratios. 7 references. (Author abstract)

000534 Selleck, Scott B.; Simpson, John B. Simpson: Dept. of Psychology, NI-25, University of Washington, Seattle, WA 98195 **Intracranial injection parameters which affect angiotensin II-induced drinking.** Pharmacology Biochemistry and Behavior. 13(4):581-584, 1980.

Variations in intracranial injection procedures altered the effects of angiotensin-II (A-II) on drinking behavior in male Long-Evans rats. All elicited significantly more drinking in animals whose cannulae penetrated the lateral ventricle en route to the lateral preoptic area than in those whose cannulae angled laterally to bypass the ventricle. In ventricular animals given equal doses of A-II, drinking was greater in those receiving more concentrated injectate. Drinking responses to a second A-II injection did not differ significantly from responses to the initial injection. 14 references. (Author abstract modified)

000535 Starke, K.; Steppeler, A.; Zumstein, A.; Henseling, M.; Trendelenburg, U. Pharmakologisches Institut, Hermann-Herder-Strasse 5, D-7800 Freiburg i. B., West Germany **False labelling of commercially available 3H-catecholamines?** Naunyn-Schmiedeberg's Archives of Pharmacology. 311(2):109-112, 1980.

Possible false labeling of commercially available 3H-catecholamines is reported. Discrepancies in results of experiments using old and new batches of (-)beta-3H-noradrenaline (NET-377) and beta-3H-dopamine (NET-131) suggest that the new catecholamines are labeled on the alpha-carbon rather than the beta-carbon. As a result, substantial amounts of tritiated water are formed upon oxidative deamination, thereby falsifying established column chromatographic procedures. It is suggested that the lot number of radioactively labeled material be specified in publications. 7 references.

000536 Summers, Roger J.; Jarrott, Bevyn; Louis, William J. Clinical Pharmacology and Therapeutics Unit, University of Melbourne, Austin Hospital, Heidelberg, Victoria 3084, Australia **Displacement of (3H)clonidine binding by clonidine analogues in membranes from rat cerebral cortex.** European Journal of Pharmacology. 66(2/3):233-241, 1980.

The effectiveness of clonidine analogues, clonidine metabolites, and clonidine-like drugs as displacers of 3H-clonidine binding to membranes from Sprague-Dawley rat cerebral cortex was examined. Results indicate that the displacement of 3H-clonidine binding to alpha2-adrenoceptors in the CNS may provide a more useful means of screening clonidine-like drugs than methods based on peripheral vasoconstrictor properties. The apparent partition coefficients of the displacing agents in octanol/phosphate buffer are discussed in relation to their in vivo antihypertensive potency and their potency as displacers of 3H-clonidine binding. 30 references. (Author abstract modified)

000537 Sundberg, D. K.; Bennett, B.; Wendel, O. T.; Morris, M. Dept. of Physiology and Pharmacology, Bowman Gray School of Medicine, Winston-Salem, NC 27103 **Hypothalamic catecholamine biosynthesis in vitro as measured by liquid chromatography and electrochemical detection.** Research Communications in Chemical Pathology and Pharmacology. 29(3):599-602, 1980.

The biosynthesis of catecholamines in male Sprague-Dawley rat hypothalamus was studied in vitro by measuring the incorporation of tritiated tyrosine into norepinephrine (NE), dopamine (DA), and L-DOPA. Amines were separated by high performance liquid chromatography and, quantitated by electrochemical detection. Results showed that the incubated hypothalamus rapidly synthesized labeled DA, while NE and L-DOPA synthesis was less apparent. Iproniazid, a monoamine oxidase inhibitor, reduced incorporation. Alpha-methyl-tyrosine, a tyrosine hydroxylase inhibitor, abolished DA synthesis without appreciably affecting tissue content. 10 references. (Author abstract modified)

000538 Wallace, Jack E.; Schwertner, Harvey A.; Hamilton, Horace E.; Shimek, Eugene L., Jr. Dept. of Pathology, University of Texas Health Science Center, San Antonio, TX 78284 **Electron-capture gas-liquid chromatographic determination of ethosuximide and desmethylmethsuximide in plasma or serum.** Clinical Chemistry. 25(2):252-255, 1979.

The determination of ethosuximide and desmethylmethsuximide, simultaneously or separately, in 50 to 100 microliters of plasma or serum is described. Derivatives of ethosuximide and desmethylmethsuximide formed by reaction with pentafluorobenzoyl chloride are extremely sensitive to the electron capture detector of a gas/liquid chromatograph. The sample, with added internal standard and ammonium sulfate as a pH-adjusting and salting-out agent, is extracted with ethyl acetate/benzene. The extract is evaporated and the derivatives are formed. Methyl-alpha-propylsuccinimide is used as the internal standard for ethosuximide, 2-phenylsuccinimide as the internal standard for desmethylmethsuximide. 13 references. (Author abstract modified)

07 EARLY CLINICAL DRUG TRIALS

000539 Andrulonis, Paul A.; Donnelly, John; Glueck, Bernard C.; Stroebel, Charles F.; Szarek, Bonnie L. Dept. of Child Psychiatry, Institute of Living, 17 Essex Street, Hartford, CT 06114 **Preliminary data on ethosuximide and the episodic dyscontrol syndrome.** American Journal of Psychiatry. 137(11):1455-1456, 1980.

Preliminary data are reported from an ongoing, controlled, doubled-blind cross-over study of the effectiveness of ethosuximide treatment of episodic dyscontrol syndrome. Data from this study in conjunction with a retrospective study of 70 patients treated with ethosuxmide tend to support the hypothesis that such patients display acts of violence that are triggered by complex partial ictal events resulting from recurrent disorderly discharges from the temporal lobes to the limbic system and that the anticonvulsant, ethosuximide, can inhibit such discharges. An illustrative case example is presented, together with a characterization of episodic dyscontrol symptom, and additional research questions under investigation. 9 references.

000540 Casey, Daniel E.; Gerlach, Jes. Dept. of Psychiatry, Veterans Administration Hospital, Portland, OR 97207 **Oxiperomide in tardive dyskinesia.** Journal of Neurology, Neurosurgery, and Psychiatry. 43(3):264-267, 1980.

Oxiperomide, a dopaminergic antagonist that has been shown to reduce levodopa-induced dyskinesias without producing an equal aggravation of parkinsonism, was evaluated in a blind, placebo controlled trial in 10 pychiatric inpatients with tardive dyskinesia (TD). It decreased TD significantly without significantly provoking or increasing parkinsonism. There was no relationship between either TD or parkinsonism and eye blinking rates. These results can be interpreted as additional evidence for the existence of more than one population of dopamine receptors involved in controlling extrapyramidal function. Although oxipromide is only a palliative suppressing agent in TD, as the symptoms returned when the drug was stopped, it is an interesting agent in the search for selective dopaminergic receptor blockers. 14 references. (Author abstract modified)

000541 Hoes, M. J. A. J. M.; Vree, T. B.; Guelen, P. J. M. Dept. of Psychiatry, Radboudhospital, Catholic University of Nijmegen, Nijmegen, postal code 6500 HB, PB. 9101, The Netherlands **Gamma-hydroxybutyric acid as hypnotic.** Encephale. 6(1):93-99, 1980.

Gamma-hydroxybutyric acid (GOH) was administered as a hypnotic to three groups of four patients each in 50, 75, or 100 mg/kg doses, respectively, and sleep effects were scored by observation and questionnaire. GOH plasma levels were determined at 75-100 mg/kg, saliva, and urine excretion at 100/mg/kg. Sleep induction was rapid and irresistible, and Ss awoke at plasma levels of 90 micrograms/ml. Sleep scores were good for 75 mg/kg, excellent for 100 mg/kg. Notable differences in mood were seen. 20 references. (Journal abstract modified)

000542 Kabes, J.; Balon, R.; Hanzlicek, L.; Skovajsova, M.; Kozakova, H. VUPs, Ustavni 91, 181 03 Prague 8, Bohnice, Czechoslovakia **/Clinical trial of oxyprothepin decanoate./** Klinicke zkouseni oxyprothepin dekanoatu. Ceskoslovenska Psychiatrie. 76(1):16-25, 1980.

Oxyprothepin decanoate, a new depot neuroleptic agent of the parathiepin series developed in Czechoslovakia, was administered in a clinical trial. The trial involved a tolerance study in 10 patients, an open 6 month study of 20 patients, and at the same time, a double-blind trial designed to compare oxyprothepin decanoate with fluphenazin decanoate. The evidence to date suggests that oxyprothepin decanoate may become another of a series of depot neuroleptic agents, with advantages in long-term treatment of psychoses, particularly schizophrenia. 21 references. (Journal abstract modified)

000543 Lemperiere, T.; Sarrazin, A.; Feline, A.; Rucine, M. O.; Pilate, C.; Basset, P.; Simon, J. Hopital Louis Mourier, 178, rue des Renouillers, F-92701 Colombes Cedex, France **/Study of vigilance after ingestion of zopiclone in comparison with nitrazepam and placebo. Methodology of the study: self-evaluation questionnaire and psychometric tests./** Etude de la vigilance apres prise de zopiclone en comparaison avec nitrazepam et placebo. Methodologie de l'etude: questionnaires d'auto-evaluation et tests psychometriques. Encephale. 6(1):23-35, 1980.

Vigilance was studied 9, 12, and 15 h after a single evening dose of 10 mg zopiclone, a new hypnotic, in a double-blind comparison with 10 mg of nitrazepam and a placebo. Self-rating questionnaire and psychometric tests were used with 21 healthy Ss who received the three drugs in random distributed order, with an interval of 3 months between each trial. The results revealed modification which, particularly 9 h after administration, reflected a change in vigilance. This was more pronounced with nitrazepam than with zopiclone. From the viewpoint of residual effects of hypnotics on vigilance, it is thus possible to position the products in the following order: 1) placebo, 2), zopiclone, and 3) nitrazepam. 17 references. (Journal abstract modified)

000544 Petova, J.; Sudkova, M.; Vinsova, M.; Soukup, K. Dept. of Child Neurology, Faculty of Medicine, Charles University, Prague, Czechoslovakia **Our experience with piracetam (nootropil UCB) treatment in children from high-risk pregnancies with subsequent minimal brain dysfunction.** In: Benesova, O., 21. Annual Czechoslovak Psychopharmacological Meeting. Jesenik Spa, Czechoslovakia, 1979. 140 p. (p. 85-89).

The effects of 9 weeks of piracetam treatment (50 mg/kg daily in three doses) were investigated in 34 children (n=28 boys, 6 girls) with minimal brain dysfunction and concomitant learning disability, attentional deficits, and other academic and social relationship problems. Of these, 62% showed a history of intrauterine hypoxia and severe immaturity associated with high-risk pregnancy. Results indicate that piracetam had favorable effects on social adaptability, attention and academic performance, and vegetative lability and anxiety. Secondary symptoms such as headache and fatigue disappeared entirely. Neurotic symptoms (tics, stammering) were unaffected; and psychomotor agitation was not changed, though it was temporarily increased in some cases at the beginning of therapy. Improvement may be expected especially in cases where there is a discrepancy between the child's ability and his performance. A positive effect on feelings of success of both the parents and the child was also found in some cases. 9 references.

000545 Steele, Thomas E.; Taylor, C. Inga. Dept. of Psychiatry and Behavioral Sciences, Medical University of South Carolina, Charleston, SC 29403 **Hypomania and tricyclic antidepressant choice.** American Journal of Psychiatry. 137(11):1457-1458, 1980.

An open pilot investigation was conducted in 55 patients with or without a history of one or more hypomanic symptoms to determine whether a history of hypomania can aid in the selection of the appropriate tricyclic antidepressant. Of 33 patients

with a history of hypomanic symptoms, 29 responded positively to imipramine; of the 22 patients who were negative for all three hypomanic symptoms, 20 responded positively to amitriptyline. Thus, the combined success rate was 89%. Results suggest that many apparently unipolar depression patients may represent an atypical form of bipolar disorder: a failure to appreciate this heterogeneity may explain the lower response rates generally observed when a single tricyclic is given to unselected unipolar patients. 11 references.

08 DRUG TRIALS IN SCHIZOPHRENIA

000546 Afeltowicz, Zbigniew. Klinika Chorob Psychicznych AM, ul. Debinki 7, 80-211 Gdansk, Poland **/The relationship between the thioridazine level in the plasma and symptoms of paranoid schizophrenia./** Poziom tiorydazyny w osoczu a objawy schizofrenii paranoidalnej. Psychiatria Polska. 13(3):223-233, 1979.

The relationship between the thioridazine level in the plasma and symptoms of paranoid schizophrenia was examined with 48 patients. The drug level in the plasma showed great individual variations in patients receiving identical doses. The thioridazine level increased with dosage increase only to a certain limit, and its maximum concentration was equal to the limit cumulation value which did not significantly change despite further increase of the drug dosage. It is concluded that no linear correlation was found between thioridazine level in the plasma and improvement of the mental state. The intensity of side-effects was not found to depend on the thioridazine level in the plasma. 24 references. (Journal abstract modified)

000547 Baldessarini, Ross J.; Davis, John M. Mailman Research Center, McLean Hospital, 115 Mill St., Belmont, MA 02178 **What is the best maintenance dose of neuroleptics in schizophrenia?** Psychiatry Research. 3(2):115-122, 1980.

Twenty-three controlled long-term studies of drug response in schizophrenia were investigated to determine the best maintenance dose of neuroleptic drug to prevent clinical worsening in schizophrenia. Data from controlled studies permitting estimates of the equivalent dose of chlorpromazine to be plotted against reduction of relapse rates were employed to compute a to drug" as the difference between relapse rate of the drug treated and placebo groups in each study examined. No significant dose effect was found between 100 and over 2,000 mg/day, no mean difference in outcome was found at doses above versus below 310 mg, and a mean relapse of placebo of only 54% was determined. Since maintenance requirements for some patients may be low, the use of minimum effective doses is encouraged as it may limit risks of late toxicity as further long-term studies of the effect of dose are undertaken. 34 references. (Author abstract modified)

000548 Bastecky, J.; Kalvach, Z.; Halkova, E.; Dusek, K.; Baborova, E. Katedra psychiatrie ILF, Ustavni 91, 181 02 Prague 8-Bohnice, Czechoslovakia **Controlled comparison of medium and high clorotepin doses in chronic schizophrenia.** Activitas Nervosa Superior. 21(3):135-136, 1979.

The effects of medium (60mg) and high (240mg) daily doses of clorotepin (a neuroleptic of perathiepin series) were assessed weekly with the BPRS and DVP in a sample of 23 hospitalized chronic schizophrenic patients. Statistically significant decreases in psychotic symptoms were reported for both dosage groups during the 6 week trial period. At both dosages, clorotepin reduced tension, suspiciousness, hallucinations, and unusual thought content. In both dosages, undesired side-effects were predominantly extrapyramidal and autonomic, not too strong, and well manageable. Repeated EKG examinations after 1 year demonstrated the transient nature of discrete pathological changes (sinus tachyarrhythmia and conduction disorders found in seven patients). Few differences between the effects of the two dosages were noted.

000549 Bianchetti, G.; Zarifian, E.; Poirier-Littre, M. F.; Morselli, P. L.; Deniker, P. Morselli: Synthelabo-L.E.R.S., Dept. of Clinical Research, 58 Rue de la Glaciere, F-75013 Paris, France **Influence of route of administration on haloperidol plasma levels in psychotic patients.** International Journal of Clinical Pharmacology, Therapy and Toxicology. 18(7):324-327, 1980.

Haloperidol plasma concentrations were compared in nine paranoid schizophrenics to whom the drug was given by three different routes of administration (i.v. perfusion, intramuscularly, and orally). When measured 15 hours after the last administration, a significant difference was found in the steady-state plasma concentration between the oral and the intramuscular route. The values were higher after intramuscular administration and were subject to less interindividual fluctuation than after the oral. The reduction in plasma levels after oral administration in respect to intramuscular were in accordance with the bioavailability of haloperidol. The opportunity of switching from oral to intramuscular treatment is discussed. 13 references. (Author abstract)

000550 Brosteanu, E. R.; Floru, L. Floru: Gesundheitsamt, Stadtverwaltung, Postfach 10 17 91, D-4100 Duisburg, Germany **/Study on visually evoked potentials in schizophrenic patients in sulpiride therapy./** Untersuchung der visuell evozierten Potentiale bei schizophrenen Patienten unter einer Behandlung mit Sulpiride. Arzneimittel-Forschung. 30(8):1306-1309, 1980.

Clinical properties of sulpiride (Dogmatil forte), which has not yet been accepted unanimously, is presented. Visually evoked potentials (VEPs) were analyzed for 25 schizophrenic patients for 24 days. The analysis of amplitudes and latencies of VEPs with dosages from 200 mg/day up to 1200 mg/day showed that low doses (200mg/day) have a thymoleptic VEP profile, similar to that of a medium to strong neuroleptic action, and similar in its VEP profile to those of perphenazine and fluphenazine. 34 references. (Journal abstract modified)

000551 Cottereau, M. J.; Poirier, M. F.; Loo, H.; Deniker, P. Hopital Sainte-Anne 1, rue Cabinis, F-75674 Paris Cedex 14, France **/Loxapine succinate: a new neuroleptic drug./** Le succinate de loxapine: un nouveau neuroleptique. Encephale. 5(3):251-267, 1979.

The new neuroleptic loxapine succinate was used in a study of 28 mental patents suffering from paranoid schizophrenia (14 males and 3 females), hebephrenia (five males and three females), flashes of delirium (one male), chronic hallucinatory psychosis (one male), and infantile psychosis (one male). Parenteral injections of the drug proved to have antipsychotic and sedative effects on 26 patients, with doses ranging from 100 to 200mg daily. Local and general tolerances were satisfactory, and secondary effects were moderate. Nineteen of these 28 chronic schizophrenics were treated previously by other neuroleptics without results. 40 references.

000552 Ferrey, G.; Sfarti, M. Hopital E.-Roux, 36, rue du Dr E.-Roux, F-95600 Eaubonne, France **/Antidepressant treatment by i.v. administration compared to p.o. administration: a double-blind study of quinupramine./** Le traitement antidepresseur par voie intraveineuse compare au traitement par voie orale: un essai en double aveugle de la quinupramine. Encephale. 6(1):59-68, 1980.

The therapeutic effects of oral and intravenous administration of a tricyclic antidepressant, quinupramine, in depressive states were compared in double-blind double placebo clinical study for

an initial period of 10 days. A group of 32 patients were treated orally for 1 month and results were assessed via the Hamilton depression rating scale. Parenteral administration was clearly superior in endogenous depressions, improvement being noted earlier and lasting longer. Maintenance therapy using the oral route produced better results when it was preceded by perfusions. Differences in the two approaches were not noted in neurotic or reactive depressions. Although there was initial improvement, it was not maintained clinically for long periods after perfusion therapy. It is concluded that quinupramine should be administered intravenously in severe cases of endogenous depression as a form of urgent therapy. 8 references. (Journal abstract modified)

000553 Glick, Ira D.; Stewart, Douglas. New York Hospital -- Cornell University Medical College, Payne Whitney Clinic, New York, NY 10021 **A new drug treatment for premenstrual exacerbation of schizophrenia.** Comprehensive Psychiatry. 21(4):281-287, 1980.

The use of lithium, together with continued use of an antipsychotic agent and a hormonal agent, as a treatment of premenstrual exacerbation of schizophrenia is described and three case histories are reported. Psychotherapy was helpful in patient management, but did not alter the relapsing episodes. The symptoms were not controlled by the administration of hormones in combination with antipsychotics or by antipsychotics alone. Control of symptoms did occur with the addition of lithium carbonate in doses sufficient to produce therapeutic blood levels. The data suggest that for some patients, but not others, continued use of lithium is essential to prevent the immediate return of premenstrual exacerbation of psychosis. 17 references.

000554 Goldstone, Sanford, Nurnberg, H. George; Lhamon, William T. Dept. of Psychology, University of Maine, Orono, ME 04469 **Effects of trifluoperazine, chlorpromazine, and haloperidol upon temporal information processing by schizophrenic patients.** Psychopharmacology. 65(2):119-124, 1979.

Healthy controls, unmedicated, actively symptomatic schizophrenics, and similar patients undergoing treatment with either trifluoperazine, chlorpromazine, or haloperidol were studied with tests of temporal discrimination and measures of transmitted information shown previously to be sensitive to brain dysfunction to determine the effects of these drugs on temporal information processing. Variations in psychophysical method, cognitive load, discrimination complexity, and sense/mode conditions permitted representative sampling of the temporal processing. Untreated, actively psychotic patients showed no impairment of temporal processing, while all three antipsychotic medications were associated with significant deficit; trifluoperazine and haloperidol produced the most deficit, with chlorpromazine in the middle between the higher potency drugs on the one hand and unmedicated patients and healthy controls on the other. 18 references. (Author abstract modified)

000555 Hirschowitz, Jack; Casper, Regina; Garver, David L.; Chang, Sidney. Dept. of Psychiatry, University of Cincinnati College of Medicine, 231 Bethesda Ave., Cincinnati, OH 45267 **Lithium response in good prognosis schizophrenia.** American Journal of Psychiatry. 137(8):916-920, 1980.

A 2 week trail of lithium using 31 patients meeting Research Diagnostic Criteria for schizophrenia or schizoaffective disorder who were also diagnosed according to DSM-III criteria is reported. One third of the patients showed reduction of their schizophrenic-like symptoms during the lithium trial. Seven of the nine responders met DSM-III criteria not for shizophrenia but for schizophreniform disorder. Such patients also met McCabe and associates' criteria for good prognosis schizophrenia. It is suggested that schizophreniform disorder and good prognosis schizophrenia may be affective disorders with atypical schizophrenic features. A lithium trial in this subgroup of patients is cautiously suggested. 22 references. (Author abstract modified)

000556 Hosek, K. Ul. J. Zizky 708, 686 01 Uh. Hradiste, Czechoslovakia **Neuroleptic and thymoleptic treatment of psychotic outpatients.** Activitas Nervosa Superior. 21(3):161, 1979.

The use of neuroleptics and thymoleptics in groups of patients with schizophrenic, affective, and other psychoses was compared in a sample of 175 psychotic outpatients treated by a (Czechoslovakian) psychiatrist in 1977. Neuroleptics were prescribed for all patient groups; in affective psychoses, thymoleptics predominated with the exception of dosulepin, which was prescribed more often for other psychoses. Analysis of prescription patterns indicates both syndrome specific and symptom specific orientations in drug therapy.

000557 Inayatulla, Mohamed; Cantor, Sheila. Cantor: Health Sciences Center, Children's Hospital, 685 Bannatyne Avenue, Winnipeg, Manitoba R3E 0W1, Canada **Effects of thioridazine on the cognitive functioning of a hypotonic schizophrenic boy.** American Journal of Psychiatry. 137(11):1459-1460, 1980.

The effects of thioridazine on cognitive functioning in a hypotonic schizophrenic boy are discussed. When the boy was 11.5 years old, he had been receiving thioridazine 200mg/day for 16 months. At this time a gradual discontinuation of medication was initiated and weekly psychotherapy sessions were begun. While taking thioridazine, he showed mildly decreased muscle tone, poverty of speech and speech content, very flat affect with expressionless facies, and anxiety. When the S had been medication free for 3 months, no sleep disturbance or exacerbation of psychotic symptoms were found. However, significant clinical differences were found including: increased speech but with much evidence of illogical thinking; decreased muscle tone and power; increased anxiety; increased warmth in relating to family, teachers, and therapist; decreased cognitive rigidity; and increased performance on block design and similarities subtests. The importance of weighing benefits of medication against adverse side-effects is noted; and it is suggested that iatrogenic inhibition of cognitive functioning, particularly in children, should be avoided. 7 references.

000558 Johnson, G. F. S.; Hunt, G. E. Dept. of Psychiatry, University of Sydney, Camperdown, N.S.W. 2050, Australia **The effect of thioridazine on prolactin levels in acutely schizophrenic patients: challenge-dose and steady-state levels.** Australian and New Zealand Journal of Psychiatry. 14(2):127-131, 1980.

The usefulness of monitoring prolactin (PRL) levels at baseline, response to challenge dose, and chronic administration of thioridazine (Melleril) in newly hospitalized unmedicated male patients with a diagnosis of acute schizophrenia was investigated. In addition, plasma levels of thioridazine and metabolites were monitored to estimate steady-state levels and dose response effects. PRL levels were within normal levels at baseline, increased fivefold after a challenge dose of thioridazine, did not significantly increase further after therapeutic dosages, and remained elevated for the duration of treatment. The rise in PRL levels was significantly correlated with the steady-state plasma levels of thioridazine and/or mesoridazine; baseline and challenge dose PRL levels did not correlate with severity of symptoms, or predict response to thioridazine. It is suggested that clinically it may be useful monitoring PRL levels since the therapeutic dosage should usually be above the dosage required to produce maximal PRL levels. 19 references. (Author abstract modified)

000559 Kriebel, George W., Jr.; Huckel, Lorraine H. Section of Psychiatry and Human Behavior, Brown University, Providence, RI 02912 **Case report: using attribution theory to limit need for neuroleptic medicine.** Journal of the American College Health Association. 29(2):67-68, 1980.

A case study illustrating the time limited use of neuroleptics in conjunction with psychotherapy emphasizing attribution theory is described. The treatment goal with the college student patient was to change the meaning of the psychotic symptoms and the medication by directly altering his attributions about these. The patient was taught to live with his symptoms, rather than to eliminate his symptoms with neuroleptics. 13 references. (Author abstract modified)

000560 Lal, S.; Cervantes, P.; Nair, N. P. V. Dept. of Psychiatry, Montreal General Hospital, Montreal, P.Q. H3G 1A4, Canada **Failure of naloxone to reverse catalepsy associated with schizophrenia: a case report.** Psychiatric Journal of the University of Ottawa. 5(3):160-161, 1980.

The effect of naloxone on catalepsy in a schizophrenic patient was studied. Naloxone failed to reverse the catalepsy. Rapid reversal followed sodium amytal but not saline. It is concluded that endogenous opioid peptides are unlikely to play a role in the genesis of catalepsy associated with schizophrenia. 5 references. (Author abstract modified)

000561 Lautin, A.; Angrist, B.; Stanley, M.; Gershon, S.; Heckl, K.; Karobath, M. Neuropsychopharmacology Research Unit, Dept. of Psychiatry, New York University Medical Center, 550 First Ave., New York, NY 10016 **Sodium valproate in schizophrenia: some biochemical correlates.** British Journal of Psychiatry. 137(September):240-244, 1980.

The biochemical and clinical correlates of sodium valproate (dipropylacetic acid, DPA) in doses of 750 to 3000mg daily were investigated in eight chronic schizophrenic patients. DPA induced clinical deterioration in five of eight subjects, generally characterized by the development of irritability, motor activation, and disorganized agitation. Signs began at doses of 1.5 to 2g/day and were dose related thereafter. CSF showed no significant change in gamma-aminobutyric acid or methoxy-hydroxyphenyl glycol, but homovanillic acid increased nonsignificantly in five patients. Findings are discussed with reference to previous research in humans and animals and implications are considered. 23 references. (Author abstract modified)

000562 Lehmann, E.; Quadbeck, H.; Tegeler, J.; Fararuni, M.; Heinrich, K. Psychiatrische Klinik der Universitat, Bergische Landstrasse 2, D-4000 Dusseldorf 12, West Germany **/Drug-response differences of high and standard dosage of fluphenazine-decanoate in relation to schizophrenic symptoms./** Wirkungsdifferenzen bei Hoch- und Standarddosierung von Fluphenazin-Decanoat in Abhangigkeit von Patienten-Merkmalen. Pharmakopsychiatrie Neuro-Psychopharmakologie. 13(3):117-129, 1980.

The drug response difference between low and high doses of fluphenazine decanoate (FD) was investigated in 40 chronic schizophrenic patients resistant to standard doses of neuroleptics. All patients were treated for at least 3 months with high doses of FD (100mg or more within 3 weeks); patients were then randomly assigned to two groups for the double-blind study. In one group the high dose was continued (average dose 225mg in 14 days; in the other FD was reduced to a standard dose of 25mg in 14 days. During the 24 weeks of investigation, the patients' somatic and psychological state was evaluated by the AMP System, and self-rating data were obtained from the EWL-K. After 24 weeks, the high dosage group was more often rated as unchanged, while standard dosage patients were more often rated as improved or worse. Average condition differences between the groups could not be found in a covariance analysis. A factorial covariance analysis showed that patients with low hostility and low catatonic syndrome scores improved after reduction of the dosage in the apathic, hallucinatory/disintegrative, and neurologic syndromes; whereas patients with high initial hostility and catatonic scores became psychopathologically worse after dose reduction. The possibility to generalize these results for the relevance to high and standard neuroleptic therapy are discussed. 15 references. (Journal abstract modified)

000563 Levine, J.; Schooler, N. R.; Cassano, G. National Institute of Mental Health, Rockville, MD 20857 **/The place of long-acting neuroleptics in the treatment of schizophrenia./** Place des neuroleptiques a action prolongee dan le traitement de la schizophrenie. Encephale. 5(3):285-290, 1979.

The proceedings of a symposium held in October 1977 in Lucca, Italy, under the auspices of NIMH and the Institute of Psychiatry of the University of Pisa, are summarized. Papers were presented which discuss the effects of long-acting neuroleptics in the treatment of patients suffering from acute symptoms of schizophrenia and stabilized patients. It is concluded that, in both cases, there is no marked difference between long-acting neuroleptics and neuroleptics administered perorally in terms of effectiveness and tolerance. The major advantage of long-acting neuroleptics is that they cannot be taken by the patients without the therapist's knowledge. 8 references.

000564 Mackay, A. V. P.; Bird, E. D.; Spokes, E. G.; Rossor, M.; Iversen, L. L.; Creese, I.; Snyder, S. H. MRC Neurochemical Pharmacology Unit, MRC Centre, University of Cambridge Medical School, Cambridge CB2 2QH, England **Dopamine receptors and schizophrenia: drug effect or illness?** Lancet. No. 8200:915-916, 1980.

Whether dopaminergic abnormalities in human postmortem brain are drug induced was examined in brain tissue obtained at necropsy from medicated and drug free schizophrenic patients and control patients with no history of neurological or psychiatric disorder. The density of 3H-spiperone binding sites was significantly raised in the psychotic group in both the caudate nucleus and nucleus accumbens, but this increase was limited to cases who were probably on neuroleptic therapy up until death and was not seen in cases free of neuroleptic drugs for 1 month or more before death. A similar pattern held for abnormalities in the affinity of dopamine receptors for the labeled ligand in the nucleus accumbens, although the influence of medication of affinity was less clear in the caudate nucleus. Results suggest that the likeliest explanation for the dopamine abnormalities previously observed in schizophrenic brain is neuroleptic treatment rather than the illness itself. 9 references.

000565 May, Philip R. A.; Van Putten, Theodore; Yale, Coralee. Veterans Administration Medical Center, Brentwood, Wilshire and Sawtelle Boulevards, Los Angeles, CA 90073 **Predicting outcome of antipsychotic drug treatment from early response.** American Journal of Psychiatry. 137(9):1088-1089, 1980.

In a study of early response to antipsychotic drug treatment 48 newly admitted schizophrenic patients were given an initial test dose of chlorpromazine hydrochloride and additional doses at 24 and 36 hours. Clinical response was measured at 48 hours and at the end of 28 days of subsequent treatment with a fixed dose of chlorpromazine. There was no consistent correlation between 48 hour change and the eventual amount of improvement by the end of drug treatment for all 10 outcome criteria. It is concluded that change early in drug treatment is a useful predictor of outcome. 10 references. (Author abstract modified)

000566 Meyers, Beverly; Tune, Larry E.; Coyle, Joseph T. Coyle: Dept. of Pharmacology, Johns Hopkins University School of Medicine, 725 North Wolfe Street, Baltimore, MD 21205 **Clinical response and serum neuroleptic levels in childhood schizophrenia. (Unpublished paper).** Research Report, NIMH Grant MH-26654, 1979. 6 p.

A case history of a preadolescent male suffering from childhood schizophrenia who was hospitalized and treated with substantial doses of haloperidol is reported. This patient was studied to determine the correlation, if any, between clincial response and serum levels of haloperidol. This case report demonstrates similarities in the symptom response to neuroleptic treatment of adult schizophrenic patients; therapeutic response to neuroleptics coincided with serum levels greater than 50ng/ml of chlorpromazine equivalents. The serum levels attained in the patient were relatively low in spite of the sizeable daily dose of haloperidol, and 20 to 25mg/day of haloperidol proved ineffective. The results suggest that some children may metabolize neuroleptics more rapidly than adults do. Hence, drug level measurement may be quite helpful in the effective management of childhood schizophrenia, especially when patients fail to respond to standard doses of neuroleptics. 10 references.

000567 Misurec, J.; Nahunek, K.; Svestka, J.; Ceskova, E. Psychiatric Clinic, Jihlavska 102, 657 15 Brno-Bohunice, Czechoslovakia **Computerized EEG in the comparison of oxyprothepin and fluphenazin decanoate.** Activitas Nervosa Superior. 21(3):140, 1979.

EEGs were recorded in nine chronic schizophrenics after a placebo interval and then 1, 2, 3, 4, 7, 9, 11, 14, 17, and 21 days following one injection of oxyprothepin (n=6) or fluphenazine decanoate (n=3), and changes in power spectra following drug administration were compared. EEGs of the parietooccipital derivation were processed, off line, by a fast Fourier transform with calculation of some parameters. Changes in the power spectra following the drugs were similar and typical for neuroleptic drugs. Results support the hypothesis that oxyprothepin decanoate in a single dose of 25mg influences the CNS at least for 2 weeks and that these changes are similar to those after fluphenazine decanoate.

000568 Nahunek, K.; Svestka, J.; Ceskova, E.; Rysanek, R. Psychiatric Clinic, Brno, Czechoslovakia **Clinical comparison of oxyprothepin and clotepine in schizophrenic patients (controlled study).** Activitas Nervosa Superior. 21(3):133-135, 1979.

A double-blind study comparing the effectiveness of oxyprothepin and clotepine in the alleviation of schizophrenic symptoms of 43 patients with schizophrenic psychoses is described. Patients were rated on the FKP and VP rating scales every 7 days of the 7 week treatment experiment. Full remission of symptoms was reported in 13 patients receiving oxyprothepin and partial remission of symptoms was reported in 18 others. Fulll remission of symptoms in 12 patients and partial remission of symptoms in 16 patients were reported for clotepine. Both compounds were very effective against the symptoms of insomnia, manic moods, pathologically intensified affectivity, motor activity, speech rate, sociability, anxiety, and aggression. No significant differences were found between the two compounds. 4 references.

000569 Planansky, Karel; Johnston, Roy. Veterans Administration Medical Center, Canandaigua, NY 14424 **Psychotropic drugs and depressive syndrome in schizophrenia.** Psychiatric Quarterly. 52(3):214-221, 1980.

Lifelong records of schizophrenic illnesses were examined to compare the occurrence and characteristics of depressive syndrome in the prephenothiazine era and with neuroleptic treatments. It was found that a depressive syndrome similar to endogenous depressive psychosis develops spontaneously and independently of neuroleptic medication. The relationship of this endogenous syndrome to the postpsychotic depression or other origin is discussed. 17 references. (Author abstract)

000570 Posmurova, M.; Hainer, V.; Marek, J.; Filip, V.; Sramkova, J. Filip: Psychiatric Research Unit, Ke Karlovu 11, 128 21 Prague 2, Czechoslovakia **Prolactin and somatotropin responses to TRH in schizophrenic patients.** Activitas Nervosa Superior. 21(3):171-173, 1979.

Serum prolactin (PLR) and somatotropin (STH) response to a single dose of thyrotropin releasing hormone (TRH) was investigated in five chronic schizophrenic inpatients and in five healthy control Ss, and the relationship between TRH administration and schizophrenic symptoms was examined. No difference between schizophrenic and control Ss' PRL responses was found, but STH response was significantly greater in schizophrenic Ss than in control Ss. Results of administration of three mood and psychosomatic inventories pretreatment and four times posttreatment do not reveal any effects of TRH administration.

000571 Salokangas, R. K. R. Psychiatric Clinic of Turku, Kurjenmaentie 4, 20700 Turku 70, Finland **Hospital and outpatient care for psychotic patients during the last three decades: subsequent hospital and outpatient treatment of psychotic patients hospitalized for the first time in 1949-50, 1959-60 or 1969-70.** Acta Psychiatrica Scandinavica. 62(1):47-62, 1980.

Hospital and outpatient visits of psychotic patients in Turku who were hospitalized for the first time in 1949-50, 1959-60, and 1969-70 were studied. After the introduction of neuroleptics, first hospitalizations became shorter, as fewer and fewer patients remained in long-term hospital treatment; however, rehospitalizations became more frequent. Along with intensified outpatient treatment, first hospitalizations became still shorter, but the total need for hospital treatment was not reduced. In the 1970's, intensive outpatient treatment provided immediately after the first hospital stay appears to be most clearly associated with a reduction in the number of hospital treatment days of schizophrenics, but not of psychoses of old age. 11 references. (Author abstract modified)

000572 Schaffer, Martin H.; Tamminga, Carol A.; Smith, Robert C.; Davis, John M. Dept. of Psychiatry, University of Chicago, Chicago, IL 60637 **Apomorphine reduces schizophrenic symptoms.** Psychopharmacology Bulletin. 16(1):55-57, 1980.

A double-blind placebo controlled, crossover study of the effects of apomorphine on 18 chronic schizophrenic and schizoaffective subjects was undertaken. Apomorphine was found to improve psychotic symptoms significantly. Improvement seen with apomorphine occurred in 9 of the 18 subjects and they experienced a reduction of from 20% to 50% in their symptoms score. This difference in response did not correlate with diagnosis, sex, age, weight, race, or neuroleptic drug type or dose. Results suggest that certain dopamine agonists at appropriate doses may form a new class of agents capable of reducing dopaminergic tone. 9 references.

000573 Sidorowicz, Slawomir; Krakiewicz, Adam; Wilska, Modesta. Klinika Psychiatryczna AM, Kraszewskiego 25, 50-229 Wroclaw, Poland **/Clinical assessment of once a day phenothiazine administration./** Ocena kliniczna leczenia jednorazowymi dawkami dobowymi fenotiazyn. Psychiatria Polska. 13(3):251-256, 1979.

The effectiveness of antipsychotic therapy with phenothiazine derivatives in single doses was assessed in 50 patients diagnosed

as schizophrenic (23), psychotic (11), schizoaffective or manic psychotic (9), and alcohol psychosis and withdrawal syndrome. Patients who for a few days had been receiving promazine, fenactil, permazine, or thioridazine in several doses were administered these drugs in a single dose. Marked improvement was obtained in 76% of the cases, 16% showed no improvement, and 8% became worse. The antipsychotic action of the drugs and the number of side-effects were similar whether neuroleptics were used in one single or in several daily doses. It is concluded that this method may be useful in psychopharmacological treatment because it has the advantage of being more convenient to the patients and the staff than the use of divided doses. 11 references. (Journal abstract modified)

000574 Tobin, Joseph M.; Robinson, Geraldine, M. H. Northwest Psychiatric Clinic, P.O. Box 224, 2712 Stein Blvd., Eau Claire, WI 54701 **Double-blind comparison of haloperidol and thiothixene with after-care treatment evaluation in psychiatric outpatients with schizophrenia.** Psychiatric Journal of the University of Ottawa. 5(3):168-174, 1980.

The efficacy and safety of three low dose strengths of haloperidol and thiothixene were compared in psychiatric outpatients with schizophrenia. After the 12 week study period, aftercare evaluation was conducted for up to 4 years. The patients exhibited moderate to moderately severe degrees of disturbances. No significant differences were found between the two compounds. Implications for pharmaceutic and aftercare evaluation are discussed. 3 references. (Author abstract modified)

000575 van Kammen, Daniel P.; Alexander, Paul E.; Bunney, William E., Jr. Unit on Neuropsychopharmacology, Biological Psychiatry Branch, NIMH, Bethesda, MD 20014 **Lithium treatment in post-psychotic depression.** British Journal of Psychiatry. 136(May):479-485, 1980.

The effects of lithium treatment in postpsychotic depression were examined with 11 schizophrenic patients. Six patients showed a significant decrease in their depressive symptomatology during a double-blind placebo substitution lithium trial. Traditional indicators of prognosis did not predict lithium response in this sample; the schizophrenic patients tolerated the lithium well. Lithium should be studied further in a larger patient sample as an adjunct in the treatment of postpsychotic depression, which frequently is treatment resistant. 37 references. (Author abstract modified)

000576 Zapletalek, M.; Zbytovsky, J.; Kindernayova, H.; Svejkovska, J. Psychiatric Clinic, Charles University, 500 36 Hradec Kralove, Czechoslovakia **Oxyprothepin decanoate injections: experience with a long-term treatment of schizophrenic psychoses.** Activitas Nervosa Superior. 21(3):138, 1979.

The effectiveness of long-term maintenance therapy with oxyprothepin decanoate in schizophrenic patients was evaluated. Twenty-five schizophrenic outpatients in stablized condition were treated for 12 to 14 months with injections which were administered 10 to 21 days apart. Oxyprothepin decanoate was well tolerated by the patients locally and even at prolonged intervals between injections it maintained a stabilized symptom condition. No relapses were reported in the treatment group, and side-effects (fatigue, hypotension, akathisia, languor, concentration disturbances, and depressive mood) were easily controllable.

000577 Zarifian, E.; Cottereau, M. J.; Cuche, H.; Loo, H.; Deniker, P. Hopital Sainte-Anne, 1, rue Cabanis, F-75674 Paris Cedex 14, France **/Advantage of pharmacokinetic data during treatment of psychoses with haloperidol./** Interet des donnees pharmacocinetiques au cours des traitements des psychoses par l'haloperidol. Encephale. 5(3):197-203, 1979.

The importance of pharmacokinetic data for the balance and control of psychoses with haloperidol is discussed. Lithium was the first psychotropic drug to illustrate the importance of such data. It is noted that haloperidol has a simple metabolism and is suitable for correlations of plasma levels and clinical effects, which should lead to a stricter use of neuroleptics in chemical therapy of psychoses. Basic pharmacokinetic data on psychotropic drugs and the characteristics of haloperidol are reviewed. The contribution of pharmacokinetic data on haloperidol in the interpretation of responses to treatment is emphasized. It is concluded that a pharmacokinetic study will often confirm that the cause of relapse during treatment is related to irregularity of dosage, and that it is necessary to establish individual nosology. 26 references.

09 DRUG TRIALS IN AFFECTIVE DISORDERS

000578 Avrutskiy, G. Ya.; Aleksandrovskiy, Yu. A.; Berezova, N. Yu.; Vinogradov, M. V.; Vishnyakova, Yu. S.; Ivanova, T. V.; Kuznetsov, O. N.; Laskova, N. B. Moskovskiy nauchno-issledovatel'skiy institut psikhiatrii, MZ RSFSR, Moscow, USSR **/Use of the new tranquilizer phenazepam in psychiatric practice./** Primeneniye novogo trankvilizatora fenazepama v psikhiatricheskoy praktike. Zhurnal Nevropatologii i Psikhiatrii imeni S. S. Korsakova. 79(3):344-349, 1979.

A clinical study of the new Soviet drug phenazepam, a benzodiazepine derivative, was conducted using 143 patients. A comparative analysis with other tranquilizers revealed the efficacy of phenazepam for a large number of neurotic and neurosis-like disturbances, including phobias and obsessions. The anxiolytic effect of phenazepam exceeds the effect of other benzodiazepine derivative tranquilizers. (Journal abstract modified)

000579 Beaini, A. Y.; Hindmarch, I.; Snaith, R. P. Snaith: Clinical Sciences Building, St. James' Hospital, Beckett St., Leeds LS9 7TF, England **A re-examination of the clinical effects of imipramine and amitriptyline in depressive illness.** Journal of Affective Disorders. 2(2):89-94, 1980.

The clinical effects of imipramine and amitriptyline were examined and compared in a double-blind trial with patients suffering from depressive illness. Results failed to confirm the prevalent belief that amitriptyline has a greater sedative effect and superior anxiolytic properties than imipramine. The therapeutic effect of these drugs was not shown to be related to their sedative properties and with regard to anxiety the reverse appears to be true. Is possible that the current clinical practice of prescribing sedative drugs in addition to antidepressant drugs for depressed patients with marked anxiety has no rational foundation and may even have adverse effects. 13 references. (Author abstract modified)

000580 Bloom, Floyd; Schultz, J. E.; Siggins, G. R.; Henriksen, S. J. Salk Institute, San Diego, CA **Catecholamine transmitter systems.** Psychopharmacology Bulletin. 16(1):35-36, 1980.

The basis for assessing certain psychiatric drugs used to treat affective disorders (lithium and tricyclic antidepressants) in terms of the primary interactions with catecholamine synapses in the brain is reviewed. Tests of the cellular actions of lithium and research on the effects of lithium on hippocampal neurons and desmethylimipramine (DMI) on both cerebellar and hippocampal neurons are described. Data in both cases indicate some dynamic reequilibration of the receptive process such that the system maintains the effectiveness of the norepinephrine pathway despite the perturbation caused by the drug. It is suggested that the functioning brain does not tolerate the perturbations produced by specific synaptic actions of drugs and responds by putting into motion cellular modulatory events that attempt, through various shifts in receptor sensitivity, to restore the op-

eration of the system to more normal values. It is also suggested that the effects of lithium and DMI that are critical to the therapeutic effect may not be those revealed on cerebellar neurons, despite the ease of evaluating these test cells.

000581 Brasseur, R. Institut Neurologique Belge, Rue de Linthout 152, B-1040 Brussels, Belgium **/Study of intravenous amitriptyline in acute depressions./** Etude de l'amitriptyline injectable dans les etats depressifs aigus. Acta Psychiatrica Belgica. 79(1):96-108, 1979.

The use of intravenous amitriptyline in the treatment of acute depressions was studied. A dose of 50mg of amitriptyline was daily administered to 27 patients in acute depressive states. When a sufficient improvement was registered for 4 consecutive days, the intravenous amitriptyline was replaced by an oral dose of 75mg daily, 25mg in the morning and 50mg at night. Results show that the intravenous amitriptyline reduced latency, was more sedative and was without major intolerance. Conversion to oral diffused forms consolidated the results obtained by parenteral administration. The antianxiety component permits the use of this drug in monotherapy.. 8 references. (Journal abstract modified)

000582 Brunswick, David J.; Amsterdam, Jay; Schless, Arthur; Rothbart, Meyer; Sandler, Kenneth; Mendels, Joe. Affective Disorders Unit (151E), VA Hospital, University and Woodland Avenues, Philadelphia, PA 19104 **Prediction of steady-state plasma levels of amitriptyline and nortriptyline from a single dose 24 hr. level in depressed patients.** Journal of Clinical Psychiatry. 41(10):337-340, 1980.

Prediction of desired plasma concentrations of amitriptyline (ASMI) and nortriptyline (NT) in depressed patients was studied. AMI and NT plasma levels were measured in depressed outpatients 24 hours after a single dose of AMI and following chronic dosing to steady-state. Plasma levels of AMI and NT measured after the single dose correlated highy with steady-state plasma levels. It is suggested that full use as a test to rapidly place patients on a therapeutic dosage of drug will need to await a clear delineation of the relationship between blood levels and clinical response for AMI. 20 references. (Author abstract modified)

000583 Chaturvedi, M. K.; Agarwal, P. K.; Pareek, N. K.; Vyas, B. K. Dept. of Psychiatry, S.M.S. Medical College, Jaipur, India **A comparative evaluation of dothiepin (prothieden) and imipramine.** Indian Journal of Psychiatry. 22(1):124-126, 1980.

A double-blind, controlled, comparative trial of dothiepin hydrochloride (prothiaden) and imipramine was conducted in 15 male and 15 female depressed (involutional, reactive, and endogenous depression) patients over a 4 week trial period. Dosages for drugs ranged up to 150mg daily, depending on patient's response. Results indicated that the mean percentage reduction in Hamilton scores was greater for dothiepin than for imipramine throughout the treatment period, although both drugs proved effective in treatment of depression. Three patients developed mild side-effects (dryness of mouth and constipation) with imipramine, one patient developed ataxia and giddiness with dothiepin.

000584 Cocchi, R. Ospedale Psichiatrico Provinciale di Pesaro, Divisione Maschile, Pesaro, Italy **Drug therapy in endogenous depression with possible primary GABA deficiency clinically detected: 38 new cases.** Rivista Sperimentale di Freniatria. 103(3):645-653, 1979.

The treatment of endogenous depression accompanied by symptoms of possible primary GABA deficiency was studied. A sample of 38 subjects (9 male and 29 female) were treated with l-glutamine and/or sodium valproate, vitamin B6, low doses of tricyclic antidepressants, and benzodiazepines. The GABA deficiency syndrome was identified by the following key symptoms, depression, and constipation, sleep disturbances, headache, cold feeling, asthenia, and craving for sweets. All the drugs used for treatment were beneficial. 21 references. (Journal abstract modified)

000585 Collard, J.; Dufrasne, M. Hopital Universitaire de Baviere, 66, boulevard de la Constitution, B-4000 Liege, Belgium / **Computerizing the MMPI in the study of a new psychotropic agent: Tiapride./** De l'interet de l'ordinateur pour l'etude par MMPI d'un psychotrope: le tiapride. Psychologie Medicale. 11(4):763-769, 1979.

A computerization of the MMPI was used as a diagnostic tool to improve methodology in clinical psychopharmacology and, specifically, to evaluate the function of the psychotropic drug tiapride. The MMPI was computerized, and the resulting original program was utilized as a control in a study of the effects of tiapride on psychiatric outpatients. Computer graphs indicate that tiapride is either a classic neuroleptic agent or an anxiolytic substance. Its originality lies more in its neurovisceral tropism and peripheral pattern (control of onycholytic side-effects), however. It also fills a gap between antidepressent and neuroleptic drugs. 5 references. (Journal abstract modified)

000586 de Groot, M. H. L. no address **Acute management of the violent aggressive patient.** Current Therapeutics. 21(7):65-67, 70-71, 1980.

Suggestions are given for handling violent and aggressive medical patients, including the diagnostic categories to be considered, drugs that are useful for sedation, and how they should be administered. Such outbursts may occur in persons who have abused alcohol or drugs, those who are in the manic phase of manic-depression, in patients with personality disorders, and in epileptics. Successful treatment involves getting the patient's confidence if at all possible and administration of a quick acting but safe medication. These include benzodiazepines, chlorpromazine, haloperidol, and amylobarbitone. Maintenance treatment is usually required and the possibility of emergency electroconvulsive therapy, particularly in patients with mania or acute schizophrenia, must be recognized. The medico-legal aspects of the problem, such as the involuntary nature of the initial treatment, are also discussed.

000587 Dunner, David L.; Murphy, Daniel; Stallone, Frank; Fieve, Ronald R. New York State Psychiatric Institute, New York, NY **Affective episode frequency and lithium therapy.** Psychopharmacology Bulletin. 16(1):49-50, 1980.

The frequency of affective episodes in bipolar manic-depressive patients as influenced by therapy with lithium carbonate was examined. The course of bipolar manic-depressive illness was found to be largely manifested by recurrent attacks of manic or manic-depressive cycles, many of which require hospitalization. The rate of relapse was related to sex, but not to age of onset of illness. In contrast, during lithium treatment severe manic relapses were largely attenuated and those hypomanic relapse which occurred required hospitalization less often. No effect of age or sex was apparent. It is concluded that, although lithium treatment does not completely prevent recurrence of attacks in bipolar manic-depressive illness, the course of illness is considerably altered with lithium treatment. 4 references.

000588 Feinberg, Michael; Carroll, Bernard. Dept. of Psychiatry, Mental Health Research Institute, University of Michigan, Ann Arbor, MI 48109 **Clinical and laboratory diagnostics appli-**

cations in depression. (Unpublished paper). Research Report, NIMH Grant MH-28294, 1979. 15 p.

An attempt to apply biological diagnostic methods to the diagnosis of depressed patients in the State of Michigan is reported. The three diagnostic tests are: sleep EEG; two neuroendocrine measures (dexamethasone suppression test, and the secretion of growth hormone by the pituitary gland in response to an intravenous dose of amphetamine); and tricyclic antidepressant plasma levels. The EEG sleep measures that discriminate between depressive diagnoses are diagramed and discussed. The two neuroendocrine measures compliment each other. An abnormal result on the dexamethasone suppression test predicts endogenous depression with over 90% accuracy. A normal result on the growth hormone test rules out endogenous depression with 90% accuracy: an abnormal result is not so informative. The treatment of endogenous depression often involves tricyclic antidepressant drugs, and, therefore, the tricyclic antidepressant plasma level is critical. 6 references.

000589 Fontan, M.; Goudemand, M.; Pellerin-Millecamps, E. Clinique psychiatrique, C.H.U. de Lille, Unites des Soins Normalisees, 6, rue du Pr-Laguesse, F-59037 Lille Cedex, France / **Clinical trial of viloxazine in depressive conditions./** Experimentation clinique de la viloxazine dans les etats depressifs. Encephale. 5(3):243-249, 1979.

The effects of the antidepressant viloxazine were studied over a period of 1 year on 30 hospitalized patients, 10 males and 20 females, 24 to 78-years-old. Ss included 10 patients suffering from endogenous depression (seven cases of melancholia, three cases of involutive melancholias), eight cases of neurotic depression, six cases of reactive regression, two cases of atypical depression, and four cases of symptomatic depression (including sclerosis of the brain, presenile dementia, and alcoholism). Very good and good results were obtained in 22 cases, the treatment failed in five cases. Effective dosages appeared to be 600mg in cases of endogenous depression, 300mg in cases of neurotic depression, and 450mg in cases of reactive depression. The patients showed good tolerance of adequate high dosages. 8 references.

000590 Glassman, Alexander H.; Roose, Steven. Dept. of Clinical Psychopharmacology, New York State Psychiatric Institute, New York, NY **Tricyclic antidepressant drug tolerance in oriental and occidental populations.** Psychopharmacology Bulletin. 15(4):41-44, 1979.

A presentation overviewing research on tricyclic antidepressant drug tolerance in oriental and occidental populations, which was delivered at the Seventeenth Annual Meeting of the American College of Neuropsychopharmacology, held in Maui, Hawaii, December 11 to 13, 1978, is summarized. Anecdotal evidence gathered in a study conducted by Professor Yamashita is provided. With an average oral dose of 225mg imipramine, approximately 60 depressed patients developed a median plasma level of 180ng/ml. Forty percent of the patients were still not treated adequately. Over half of the nonresponders with plasma levels below 180ng/ml recovered completely when their oral dose was raised. These oral doses are far in excess of the doses usually used in oriental patients. Professor Yamashita's survey data and Dr. Chien's clinical experience with oriental patients in the U.S. would suggest that oriental depressed patients would not tolerate these doses. Studies of plasma concentrations in the U.S. and Scandinavia also are examined. 4 references.

000591 Gottlieb, P.; Wandall, T.; Overo, K. Fredricson. Psychiatric Dept. E3, Vejle Hospital, 7100 Vejle, Denmark **Initial, clinical trial of a new, specific 5-HT reuptake inhibitor, citalopram (Lu 10-171).** Acta Psychiatrica Scandinavica. 62(3):236-344, 1980.

Ten endogenously depressed inpatients were treated once daily for at least 4 weeks with 40-50 mg citalopram (Lu 10-171), a specific serotonin reuptake inhibitor. The Hamilton rating scale for depression and global assessment indicated pronounced or moderate response in seven patients and slight or no response in three. Side-effects were few, mild, and transient, and neither anticholinergic nor cardiotoxic effects were observed. No difference was observed between responders and nonresponders regarding psychopathology, plasma levels, or uptake inhibition. It is concluded that citalopram seems to possess antidepressant properties, and that controlled trials are wanted to evalute its therapeutic value as well as the underlying hypothesis of serotonin deficient depressions. 11 references. (Author abstract modified)

000592 Hamouz, W.; Pinder, R. M.; Stulemeijer, S. M. Pinder: Scientific Development Group, Organon International B.V., 5340BH Oss, The Netherlands **A double-blind group comparative trial of mianserin and diazepam in depressed outpatients.** Pharmakopsychiatrie Neuro-Psychopharmakologie. 13(2):79-83, 1980.

In a double-blind trial in depressed outpatients, 80 subjects were administered either mianserin 30 to 80mg daily or diazepam 15 to 40mg daily for 4 weeks. Most patients received 50 to 60mg mianserin or 25 to 30mg diazepam, daily after the first week. Mianserin was significantly superior to diazepam in antidepressant efficacy from day 14 to the end of the trial as measured by the Hamilton Rating Scale for Depression and the beck Self-Rating Scale, and at day 28 as measured by the Clinical Global Impression. All three measures showed that the mianserin group started the trial with a significantly more severe degree of illness than the diazepam group, but this difference was reversed by day 14. Side-effects were more frequent with mianserin. 12 references. (Author abstract)

000593 Hanus, H.; Zapletalek, M.; Stransky, P. Psychiatric Clinic, Charles University, 500 36 Hradec Kralove, Czechoslovakia **EEG in patients treated with lithium.** Activitas Nervosa Superior. 21(3):164-166, 1979.

A 3 year study of the effects of prophylactic lithium therapy on EEGs of 60 psychiatric patients is described. No major changes in EEG activity were found which could be explained on the basis of lithium medication in therapeutic doses. Data agree with previous research that EEG is a good indicator of lithium intoxication. Results tend to confirm the conclusion of Schou (1974) that EEG changes in currently administered lithium are small and reversible. 5 references.

000594 Himmelhoch, Jonathan M.; Neil, John F.; May, Susan J.; Fuchs, Carilyn Z.; Licata, Sandra M. Western Psychiatric Institute and Clinic, 3811 O'Hara St., Pittsburgh, PA 15261 **Age, dementia, dyskinesias, and lithium response.** American Journal of Psychiatry. 137(8):941-945, 1980.

Manic-depressive patients between the ages of 55 and 88 who were treated with lithium salts were investigated to determine the effects of aging on the course of illness, the treatment response, and the true incidences of both chronic mania and neurological deterioration. Fifty-six Ss responded well to lithium. Advanced age had no effect on course or outcome. However, with increased clinical evidence of neurological illness, there was an increased incidence of chronic mania, a poorer response to lithium, and more frequent and severe neurotoxicity. Extrapyramidal syndromes are reported to be particularly devastating. Integrating these findings with previous research, it is concluded that the worse the neurological illness, the greater the probability of the development of a chronic manic state, the less the likelihood of a therapeutic response to lithium, and the

higher the incidence of neurotoxic complications. 17 references. (Author abstract modified)

000595 Horak, J.; Basova, J.; Bartakova, L.; Benesova, O.; Soucek, K.; Zatecka, I.; Jelinek, R. Dept. of Sports Medicine, Faculty of General Medicine, Charles University, Salmovska 5, Prague 2, Czechoslovakia **Comparative study of the cardiotoxicity of amitriptyline and maprotiline in depressive patients.** Activitas Nervosa Superior. 21(3):141-142, 1979.

A comparative study of the effect of the tricyclic thymoleptic amitriptyline and the tetracyclic maprotiline on cardiac function of depressed patients at rest and after work is described. In seven depressive inpatients receiving amitriptyline and 10 depressive inpatients receiving maprotiline (both drugs administered 3 times daily, 225mg/day), physiological indices were measured pretreatment, following a 5 day placebo interval, and 2 weeks following drug administration. No significant differences indicative of cardiotoxic effects of the drugs were found, but there was a slight prolongation of QRS interval in four patients treated with maprotiline.

000596 Hrdina, P. D.; Rovei, V.; Henry, J. F.; Hervy, M. P.; Gomeni, R.; Forette, F.; Morselli, P. L. Morselli: Dept. of Clinical Research, SYNTHELABO-LERS, Paris, France **Comparison of single-dose pharmacokinetics of imipramine and maprotiline in the elderly.** Psychopharmacology. 70(1):29-34, 1980.

Pharmacokinetic profiles of imipramine and a newer tetracyclic antidepressant, maprotiline, were studied in elderly (75 to 83 years of age) Ss who were given a single oral dose of 125 and 175mg, respectively, of these drugs. The apparent elimination half-life of imipramine was 20.8 to 34.9 h; its bioavailability was 40% to 64%; and the apparent plasma clearance was from 0.27 to 0.57 h/kg. Maprotiline had a longer half-life, but its bioavailability and plasma clearance values were in the same range as those of imipramine. It appears that the elimination half-life of imipramine is longer and its plasma clearance is markedly reduced in elderly Ss when compared to values reported in young adults. Subjective clinical side-effects were minimal with the two drugs. However, alterations in heartrate, blood pressure, or electrocardiogram occurred in all Ss. This suggests that caution be exercised before intiating and during the treament of elderly patients with these antidepressant drugs. 21 references. (Author abstract modified)

000597 Johnson, F. N. University of Lancaster, Lancaster, England **Handbook of lithium therapy.** Lancaster, MTP Press, 1979. 453 p. $19.95.

A compilation of papers on the therapeutic use of lithium in psychiatry is presented. Topics discussed include the clinical use of lithium salts, factors determining therapeutic outcome, the routine use of lithium therapy, contraindications, unwanted effects and toxicity, and the use of lithium salts in special groups of patients.

000598 Jouvent, Roland; Lecrubier, Yves; Puech, Alain J.; Simon, Pierre; Widlocher, Daniel. Pavillon Philippe Chaslin, 47 Boulevard de l'Hopital, La Salpetriere, F-75013 Paris, France **Antimanic effect of clonidine.** American Journal of Psychiatry. 137(10):1275-1276, 1980.

The antimanic properties of clonidine (three 0.15 mg tablets per day) were assessed in eight patients during typical manic episodes. A strong global improvement was observed in three patients, and partial improvement in three. Only two of the eight required additiional medication with droperidol. Efficacy was slight until day 3 of treatment when full dosage was achieved. Hypotension, necessitating discontinuation of treatment was found in one patient; all other patients showed only slight hypotension without clinical expression. Two patients exhibited a mood inversion requiring discontinuation of treatment after 1 week, but antidepressant treatment was needed for only one patient. While no firm conclusions can be drawn, results suggest that clonidine may have true antimanic, as opposed to purely sedative, properties warranting further investigation. 8 references.

000599 Jungkunz, G.; Kuss, H.-J. Kuss: Neurochemische Abt., Psychiatrische Klinik, Universitat Munchen, Nussbaumstrasse 7, D-8000 Munich 2, West Germany **On the relationship of nortriptyline: amitriptyline ratio to clinical improvement of amitriptyline treated depressive patients.** Pharmakopsychiatrie Neuro-Psychopharmakologie. 13(3):111-116, 1980.

The antidepressant effect of amitriptyline was studied in 28 endogenous depressive patients. They received 150mg amitriptyline once nightly in a sustained release form for 4 weeks. Blood samples were drawn 12 hrs after medication. Amitriptyline concentrations were between 35 and 300ng/ml; nortriptyline concentrations were between 20 and 330 mg/ml. No correlations were found between plasma concentrations of amitriptyline, nortriptyline, or their sum, and the clinical outcome of treatment. Plasma levels of amitriptyline depended on neither the age nor the sex of the patients. A significant correlation was found between the ratio of nortriptyline to amitriptyline concentrations in serum (demethylation ratio) and clinical improvement. The demethylation ratio appeared to be relatively constant after a few days of treatment. The results suggest that monitoring the demethylation ratio of endogenous depressive patients treated with amitriptyline may predict therapeutic effects of the treatment. It is suggested that a balance between noradrenergic and serotonergic mechanisms is necessary to improve antidepressant treatment with amitriptyline. 14 references. (Author abstract)

000600 Kabes, J.; Erban, L.; Dostal, T.; Hanslicek, L.; Skondia, V. Institute of Psychiatry, Prague, Czechoslovakia **Clinical and biochemical action of piracetam (nootropil) in drug-resistant depression.** In: Benesova, O., 21. Annual Czechoslovak Psychopharmacological Meeting. Jesenik Spa, Czechoslovakia, 1979. 140 p. (p. 130-136).

Clinical and biochemical actions of piracetem were examined in 20 depressed inpatients who had proven resistant to previous antidepressant therapies. Diagnosis included endogenous unipolar and bipolar depression, and atypical depression with phobic features. Patients continued drug therapy with tricyclics or nialamide, piracetam (400 mg capsules in a daily dose of 2.4 g) was coadministered for a 4 week period preceded and followed by administration of identical placebo capsules for 8 to 14 days. Both global clinical impressions and Hamilton Depression Rating Scale scores showed significant improvement during coadministration of piracetam. Substitution of placebo resulted in further improvement in some patients, worsening in others. Improvements with piracetam occurred primarily in the first 2 weeks of treatment. Clinical improvement was followed by a significant increase in ATP and a decrease in the ADP/ATP ratio. Results hold promise for the treatment of socalled drug resistant depressions; a more conclusive evaluation of piracetam is planned.

000601 Kanarkowski, Roman; Wichlinski, Leslaw; Targonska, Anna. Zaklad Biofarmacji CMKP, ul. Debowa 3, Bydgoszcz, Poland **/A preliminary study on determination of the optimum opipramol dosage in depressive patients./** Wstepne badania nad wyznaczeniem optymalnego dawkowania opipramolu u chorych z depresja. Psychiatria Polska. 13(3):235-241, 1979.

The opipramol level in the blood serum of depressive patients receiving Pramolan tablets was examined. Clinical observations

revealed that improvement in the area of depressive symptoms became manifest as a rule after the drug dosage administered every 8 hours had reached 100mg. The minimum opipramol concentration in the blood serum found after increasing the dosage was 0.598mcg/cm3. This may point to a relationship between drug content in the blood serum and clinical response. Findings suggest the advisability of determining the therapeutic drug level to devise optimum opipramol dosages. 18 references. (Journal abstract modified)

000602 Katon, Wayne; Raskind, Murray. Dept. of Psychiatry and Behavioral Sciences, School of Medicine, University of Washington, Seattle, WA 98195 **Treatment of depression in the medically ill elderly with methylphenidate.** American Journal of Psychiatry. 137(8):963-965, 1980.

Three cases of depressed geriatric patients who either could not tolerate tricyclic antidepressants or whose medical status was felt to contraindicate the use of tricyclics are reported. Each of these patients appeared to have a marked therapeutic response to low dose methylphenidate. Although positive case reports do not establish the antidepressant efficacy of a drug, these three cases illustrate several aspects of treatment with methylphenidate which suggest that this drug deserves more careful scrutiny as an antidepressant agent in the geriatric population. Other approaches which might be used in such patients are also discussed. 16 references. (Author abstract modified)

000603 Kielholz, P.; Terzani, S.; Poldinger, W. Psychiatrische Universitats-Klinik, CH-4056 Basel, Switzerland **The long-term treatment of periodical and cyclic depressions with flupenthixol decanoate.** International Pharmacopsychiatry. 14(6):305-309, 1979.

In a 2 to 3 year open study, 30 manic depressive patients were treated with flupenthixol decanoate (depot form). These periodic and cyclic depressive patients had side-effects during treatment with lithium salts. In comparison with the depressive and manic phases before treatment, the prophylactic effects of flupenthixol decanoate on periodic and cyclic forms of depression were similar to the effects of lithium salts. 9 references. (Author abstract)

000604 Kjellman, Bengt F.; Karlberg, Bengt E.; Thorell, Lars-Hakan. Dept. of Psychiatry, University Hospital, S-581 85 Linkoping, Sweden **Cognitive and affective functions in patients with affective disorders treated with lithium: an assessment by questionnaire.** Acta Psychiatrica Scandinavica. 62(1):32-46, 1980.

Changes in affective and cognitive function in patients with affective disorders under long-term lithium therapy were assessed through administration of a 19 item questionnaire. The function of the hypothalamic pituitary thyroid axis was also analyzed by biochemical studies, and the interrelations between the function of this axis and affective and cognitive functions were studied. The patients under lithium maintenance therapy showed no clear changes in affective and cognitive function. Patients who admitted periods of depression under lithium therapy showed highly significantly greater variance both in free thyroxine index and in thyrotropin levels than patients denying such periods. It is concluded that successful prophylactic lithium therapy against depression is linked to a stabilizing effect on the hypothalamic pituitary thyroid axis. 29 references. (Author abstract modified)

000605 Kolomaznik, M.; Musil, F.; Suva, J. Psychiatric Clinic, Dukelska trida 69, 301 00 Plzen, Czechoslovakia **Lithium level in some biological fluids at its prophylactic-therapeutic application.** Activitas Nervosa Superior. 21(3):169, 1979.

Lithium levels in serum, saliva, urine, and ejaculate from 14 patients undergoing long-term lithium carbonicum therapy for manic-depressive psychosis or sexual aberrations were assessed. Measurement of concentrations in the ejaculate was inspired by reports of impotentia generendi in males treated with lithium, and by pathologic spermiologic findings and reduced metabolism of spermia under the effect of lithium in vitro. Approximately twice as much lithium was found in ejaculate as in serum, but the level in ejaculate was approximately 1% of the level required for reducing spermia motility in vitro.

000606 Linkowski, P.; Brauman, H.; Mendlewicz, J. Dept. of Psychiatry, Hospital Erasme, Free University of Brussels, 808 route de Lennick, B-1070 Brussels, Belgium **Growth hormone after TRH in women with depressive illness.** British Journal of Psychiatry. 137(September):229-232, 1980.

Plasma growth hormone (GH) release after thyrotrophin releasing hormone (TRH) injection was investigated in 27 unipolar and 23 bipolar depressive women and in 39 normal female controls matched for age and menopausal status. Peaks of GH secretion after TRH were observed in some depressive patients as well as in some normal controls, but there were no significant differences in GH response after TRH administration between patients and controls. The implications of these findings are discussed in reference to such factors as nonspecific stress responses and abnormal neuroendocrine circadian rhythms in affectively ill patients. 12 references. (Author abstract)

000607 Megrabyan, A. A.; Khachaturyan, A. M.; Amadyan, M. G.; Burnazyan, G. A. Kafedra psikhiatrii Yerevanskogo meditsinskogo instituta, Yerevan, USSR /**The treatment of schizoaffective psychoses with lithium carbonate.**/ Lecheniye shizoaffektivnykh psikhozov carbonatom litiya. Zhurnal Eksperimental'noy i Klinicheskoy Meditsiny. 19(4):54-58, 1979.

The treatment of schizoaffective psychosis with lithium carbonate was studied in connection with the influence of lithium on emotional and process symptoms in schizophrenia. Lithium carbonate was prescribed for 23 patients with schizophrenia with recurring process tendencies. All the patients had a clinical picture which was dominated by affective disorders. A positive therapeutic effect was noted in 19 of the patients. A second group was studied, the members of which exhibited symptoms of delirium (sometimes with hallucinations) together with affective disorders. Among this group treatment with lithium carbonate alleviated the emotional disorders. Results show that lithium carbonate normalizes affect and promotes the reversal of psychotic disorders, and that the reduction of psychotic symptoms of catathymic/holothymic genesis promotes the reduction of pathological symptoms which obviates the necessity for large doses of neuroleptic medications, and facilitates successful treatment by means of low doses in combination with lithium carbonate. 19 references. (Journal abstract modified)

000608 Mendlewicz, J.; Youdim, M. B. H. Dept. of Psychiatry, Erasme Hospital, Free Unviersity of Brussels, 808 Route de Lennick, B-1070 Brussels, Belgium **Antidepressant potentiation of 5-hydroxytryptophan by L-Deprenil in affective illness.** Journal of Affective Disorders. 2(2):137-146, 1980.

The effects of L-Deprenil, an irreversible selective MAO-B inhibitor, given to 14 patients with unipolar and bipolar depression receiving L-5-Hydroxytryptophan (L-5-HTP) and benzerazide were examined. Ten out of 14 patients showed a good response to the combination of drugs and a correlation was found between the degree of platelet MAO inhibition and clinical response. In a second study, patients treated with the combination of L-Deprenil and L-5-HTP showed a significantly greater clinical improvement than placebo patients but this was not found

for patients treated with 5-HTP alone. A positive relationship is demonstrated between mood improvement and degree of platelet MAO inhibition in patients treated with L-Deprenil. 37 references. (Author abstract modified)

000609 Molcan, J.; Caplova, T; Rakus, A.; Strecko, A. Psychiatrische Klinik, Mickiewiczova 13, 8884 21 Bratislava, Czechoslovakia **/The treatment of depressive conditions with nomifensine./** Die Behandlung depressiver Zustande mit Nomifensin. Activitas Nervosa Superior. 21(3):142-143, 1979

A clinical study of the effect of nomifensine on depressed patients was conducted. The Ss were 20 psychiatric patients, 14 with endogenous and six with reactive depression. Eleven cases presented repressed and nine cases agitated depression. Nomifensine was given in a dosage of 75 to 150mg per day over a period of 21 days with no additional psychopharmacological agents administered. Nomifensine treatment led to improvement in 17 patients, of whom 10 achieved normalization, while treatment had to be discontinued in three cases due to a worsening of their condition. The global FKD scores reflected a rapid commencement of antidepressive effects even in the first week. Incidences of undesirable side-effects was relatively minor, with the exception of insomnia in nine patients. Laboratory and auxiliary investigations demonstrated negligible changes. The preparation appears suitable for the treatment of ambulatory depression patients.

000610 Moller, H.-J.; v. Zerssen, D.; Emrich, H. M.; Kissling, W.; Cording, C.; Schietsch, H. J.; Riedel, E. Max-Planck-Institut fur Psychiatrie, Kraepelinstrasse 10, D-8000 Munich 40, Germany **Action of d-propranolol in manic psychoses.** Archiv fur Psychiatrie und Nervenkrankheiten. 227(4):301-317, 1979.

Six manic patients were treated with high doses of d-propranolol or d-propranolol and d1-propranolol in a double-blind, placebo controlled study. The following variables were measured: propranolol dosage, propranolol serum concentration, pulse frequency, blood pressure, and psychotic behavior. An improvement was noticed in all cases. High dosages were necessary to obtain sufficient effect. The antimanic property of d-propranolol was approximately 50% smaller than the antimanic property of d1-propranolol. It is concluded that at least some part of the antimanic action of the beta blockers is independent from the beta blocking property. 61 references. (Author abstract)

000611 Muller-Oerlinghausen, B.; Passoth, P.-M.; Poser, W.; Pudel, V. Psychiatrische Klinik, Freie Universitat Berlin, Nussbaumallee 36, D-1000 Berlin 19, Germany **Impaired glucose tolerance in long-term lithium-treated patients.** International Pharmacopsychiatry. 14(6):350-362, 1979.

The oral glucose tolerance test (oGTT) was performed twice in 49 unipolar and bipolar endogenous depressive patients under long-term lithium (Li) treatment. Blood glucose and plasma insulin were determined. The oGTT results were evaluated by three criteria (Kobberling-Creutzfeldt, WHO, and Epidemiological Study Group of the European Diabetes Association) and were compared to two representative reference studies from normal populations. The frequency of impaired glucose tolerance in the patients was three times higher than expected on the basis of the studies on normal populations. The variability of the oGTT curves between the first and the second tests, as well as the steepness of the time course of the insulinogenic index suggested mild disturbances of carbohydrate metabolism (mild diabetes) in some of the patients. It is considered unlikely that the impairment of glucose tolerance in the patients was a direct pharmacological effect of the lithium salts. The possible role of age, sex, manic-depressive disease, and particularly obesity on glucose tolerance is discussed. It is suggested that the oGTT should be carried out periodically in long-term Li treated patients over 40 years old to detect abnormalities in their carbohydrate metabolism. 53 references. (Author abstract)

000612 Murphy, Dennis L.; Lipper, S.; Campbell, I. C.; Major, L. F.; Slater, S. L.; Buchsbaum, M. S. Clinical Neuropharmacology Branch, NIMH, Bethesda, MD 20205 **Comparative studies of MAO-A and MAO-B inhibitors in man.** In: Singer, T., Monoamine oxidase. New York, Academic Press, 1979. 557 p. (p. 457-475).

The biochemical and behavioral consequences of chronic administration of clorgyline, a monoamine oxidase (MAO) type-A inhibitor, and of pargyline or 1-deprenyl, both MAO-B inhibitors, were examined. Data were obtained from in vitro studies of human and nonhuman primate brain MAO and from studies of selective MAO inhibitors used in vivo in nonhuman species. Most of the data are from work with depressed patients who received clorgyline and/or pargyline (and occasionally deprenyl) for 4 week periods under placebo controlled, double-blind conditions. Platelet MAO was used as an index of MAO-B activity, while amine metabolite changes were used to indirectly estimate MAO-A inhibition. Differential effects of the two types of inhibitors were observed for REM sleep and plasma norepinephrine measures, along with differences in antidepressant and antianxiety effects. Findings have implications for pharmacotherapy with tricyclic antidepressants and MAO inhibitors. 55 references.

000613 Nahunek, K.; Rysanek, R.; Svestka, J.; Ceskova, E.; Misurec, J.; Buresova, A. Psychiatric Clinic UJEP, Jihlavska 104, Brno-Bohunice, Czechoslovakia **Nomifensin in the treatment of endogenous depressions. Clinical experience and EEG findings.** Activitas Nervosa Superior. 21(3):145-146, 1979.

An open clinical study of the effects of nomifensin in the treatment of endogenous depression, in which 39 inpatient placebo nonresponders were evaluated for clinical symptomatology and EEG patterns, is described. Nomifensin was found to be an effective antidepressant, producing distinct improvement in 64% of the treated patients. The effectiveness was markedly higher in depressions with lower initial pathology. The greatest therapeutic effect was noted in the first week of treatment. The drug was well tolerated and 51% of patient suffered no side-effects.

000614 Norman, Trevor R.; Burrows, Graham D.; Davies, Brian M.; Maguire, Kay P.; Wurm, Jeremy M. E. Dept. of Psychiatry, University of Melbourne, Parkville 3052, Victoria, Australia **Viloxazine plasma concentrations and clinical response.** Journal of Affective Disorders. 2(3):157-164, 1980.

The effects of daily treatment with 300mg viloxazine for 29 days on 11 patients suffering from primary depressive illness were investigated. Blood samples were collected at weekly intervals and severity of depression assessed using the Hamilton depression rating scale. Mean plasma viloxazine level for all patients during the trial was 1.20microg/ml and ranged from 0.40 to 2.70microg/ml. No simple relationship between plasma concentration and amelioration score was observed at day 15, day 22, or day 29. No significant difference in plasma concentrations between responders and nonresponders was observed at day 29. Side effects were not correlated with plasma concentrations. 22 references. (Author abstract modified)

000615 Novotny, V.; Molcan, J.; Sip'kovska, E.; Konikova, M. Psychiatrische Universitats-Klinik, Mickiewiczova 13, 884 21 Bratislava, Czechoslovakia **/The treatment of anxious-depressive syndromes with tofizopam./** Die Behandlung anxios-depressiver Syndrome mit Tofizopam. Activitas Nervosa Superior. 21(3),:152-153, 1979.

A clinical study on the effect of tofizopam in anxious depressed patients was conducted. Ss were 30 anxious depressed patients, 19 women and 11 men, aged between 20 and 65. Tofizopam, a relatively new anxiolytic preparation without any somnolence, myelorelaxant or anticonvulsants, was administered orally in a dosage of 100 to 300mg for a period of 21 days. Ss were evaluated both clinically and with the Beck scale before and after treatment and routine laboratory investigations were conducted. The results showed a diminution of psychopathological symptoms to varying degrees in 27 patients. A deterioration or maintenance of symptoms occurred in three cases. The average scores of the Beck scale fell from a pretreatment score of 32.1 to 15.4 after 21 days of treatment. Improvements occurred in all 21 Beck scale categories. No deterioration, side-effects or complications during treatment were noted. It is concluded that the preparation produces a good anxiolytic effect and a reliable reduction of tension without dampening or hypnogenous effects. 5 references.

000616 Oules, M. J.; Boscredon, J. no address /**Contribution to the clinical study of cerebral dopaminergic mechanisms: the action of piribedil in psychiatry. First results.**/ Contribution a l'etude clinique des mecanismes dopaminergiques cerebraux: action du piribedil en psychiatrie. Premiers resultats. Annales Medico-Psychologiques. 137(9):921-925, 1979.

The use of piribedil for the treatment of depression or maniacal excitation was studied. The drug was administered to 28 subjects (60 to 80mg daily). The subjects were also administered the Hamilton scale and the B.P.R.S. Secondary effects were checked every 30 days and behavior was monitored daily. Results show that despite some good results, piribedil was not acceptable as treatment for manic-depressive psychoses; however, the drug was very useful for nonpsychotic depressive and demential conditions. It is concluded that extensive research in this area be conducted in order that this beneficial drug be used for practical clinical applications. 4 references.

000617 Philipp, Michael; Werner, C. Universitatsnervenklinik, D-500 Cologne 41, West Germany **Prediction of lofepramine-response in depression based on response to partial sleep deprivation.** Pharmakopsychiatrie Neuro-Psychopharmakologie. 12(4):346-348, 1980.

The improvement of depression after partial sleep deprivation (SD) in the second half of the night was tested for its predictive power for the therapeutic efficacy of pharmacotherapy with lofepramine. In a group of 15 patients depression was found (in contradiction of the findings of Wirz-Justice et al (1976)) that the velocity of the antidepressive effect of SD had no predictive values. On the other hand, the amount of improvement in depression after SD was of predictive value. This was independent of the time of occurrence of the improvement peak after SD. An improvement of more than 35% measured by the Zerssen Bf-S self-rating scale or by the Hamilton Depression Rating Scale on the first or second day following SD was highly predictive of good drug response to 3 weeks of 210 mg lofepramine per day. 8 references. (Author abstract)

000618 Post, R. M.; Jimerson, D. C.; Silberman, E. K. Biological Psychiatry Branch, National Institute of Mental Health, Bethesda, MD 20205 **Amphetamine and piribedil in affective illness.** Psychopharmacology Bulletin. 16(1):57-59, 1980.

The effects of direct and indirect dopamine agonists on clinical and biological variables in depressed patients were investigated. The question of whether changes following acute amphetamine would predict subsequent antidepressant response to the longer acting dopamine agonist piribedil was studied. Consistent psychomotor activation and cognitive improvement were observed following amphetamine administration, although a range of effects on mood was noted similar to that observed following intravenous cocaine. Only one patient showed psychosis activation compared to 42% of schizophrenics in a previous study. Neither the degree of amphetamine-induced activation nor the pattern of effects on mood were associated with subsequent antidepressant response to the dopamine agonist piribedil. Findings appear to highlight a continuum or biological heterogeneity concept in that activation of dopaminergic merchanisms is associated with a range of effects on mood and behavior which may in part relate to underlying clinical and biological vulnerabilities. 10 references.

000619 Puig-Antich, Joaquim; Perel, James M.; Lupatkin, William; Chambers, William J.; Shea, Catherine; Tabrizi, Mary Ann; Stiller, Richard L. New York State Psychiatric Institute, 722 West 168 St., New York, NY 10032 **Plasma levels of imipramine (IMI) and desmethylimipramine (DMI) and clinical response in prepubertal major depressive disorder: a preliminary report.** Journal of the American Academy of Child Psychiatry. 18(4):616-627, 1979.

The relationship between clinical response to imipramine (IMI) of prepubertal major depressive disorder at 5 weeks and plasma levels of IMI and its metabolite desmethylimipramine (DMI) was examined. Data are presented on 13 children, and a strong correlation emerged in nondelusional Ss between total plasma level and clinical response. A total plasma level of 146 ng/ml separates responders from nonresponders. These data parallel those previously reported in adult major depressive disorder studies. 25 references. (Author abstract modified)

000620 Puig-Antich, Joaquim; Perel, James M.; Chambers, William J. New York State Psychiatric Institute, New York, NY **Imipramine treatment of prepubertal major depressive disorders: plasma levels and clinical response -- preliminary report.** Psychopharmacology Bulletin. 16(1):25-27, 1980.

The relationship between steady-state plasma levels of imipramine (IMI) and desmethylimipramine and clinical response in prepubertal major depressive disorders was investigated. Comparison of maintenance total levels between responders and nonresponders was significant. Responders had a mean plasma level of 231 ng/ml, while for the nonresponders the same value was 128 ng/ml. Correlational analyses between dose, plasma levels, and clinical response were not significant. The significant correlation between plasma level and clinical response provides evidence for the effectiveness of IMI in prepubertal major depressive disorder and for the similarity between child and adult major depressive disorder. 12 references.

000621 Quadri, A. A.; Shalini, Kump; Channabasavanna, S. M. SRTR Medical College Hospital, Ambajogai, Maharastra, India **d-Amphetamine as a predictor for response to imipramine and amitriptyline.** Indian Journal of Psychiatry. 22(2):182-184, 1980.

The utility of a 3 day trial of d-amphetamine in the prediction of response to tricyclic antidepressants was evaluated in a double-blind study of 14 patients meeting Feigner criteria for endogenous depression and showing pretrial Hamilton Depression Rating Scale scores above 20. Ss were blindly administered placebo or d-amphetamine prior to blind administration of imipramine or amitriptyline. It was found that all patients who improved with d-amphetamine also improved with tricyclics, while the two Ss not improving with d-amphetamine failed to show a positive drug response. Results suggest that d-amphetamine response may be useful in differentiating tricyclic responders from nonresponders. 10 references. (Author abstract modified)

000622 Ragheb, M.; Ban, T. A.; Buchanan, D.; Frolich, J. C. Middle Tennessee Mental Health Institute, 1501 Murfreesboro Road, Nashville, TN 371217 **Interaction of indomethacin and ibuprofen with lithium in manic patients under a steady-state lithium level.** Journal of Clinical Psychiatry. 41(11):397-398, 1980.

The clinical effects of prostaglandin synthesis inhibitor were studied in lithium treated manic patients. While indomethacin increased plasma lithium concentration, the effect of ibuprofen was inconsistent. Adverse reactions included tremors unrelated to changes in plasma lithium levels; nausea and drowsiness in one ibuprofen treated patient (possibly related to the slight increase in plasma lithium), and a syndrome consisting of running nose, malaise and generalized body aches in one indomethacin treated patient. The findings support an important interaction between prostaglandin synthesis inhibitors and especially indomethacin and lithium, which may result in an increase in adverse reactions. 9 references. (Author abstract modified)

000623 Rektor, L.; Horka, E.; Misurec, J.; Cerna, V. Psychiatric Clinic, Jihlavska 104, Brno-Bohunice, Czechoslovakia **Our experience with maprotilin treatment of depressive states.** Activitas Nervosa Superior. 21(3):140-141, 1979.

The effects of maprotilin treatment of depressive states were assessed in a study of 22 female inpatients hospitalized for protracted, drug resistant, endogenous depression. The onset of the drug effect (daily i.v. or oral 150 to 250mg doses) occurred within 1 to 2 weeks of initiation of therapy. Full remission was achieved in six patients, partial remission was achieved in nine patients, and no effect was noted in seven patients. In two patients, therapy was discontinued due to increasing depressive symptomatology. No serious side-effects were noted.

000624 Rounsaville, Bruce J.; Sholomskas, Diane; Prusoff, Brigitte A. Substance Abuse Treatment Unit, Connecticut Mental Health Center, 100 Park St., New Haven, CT 06511 **Chronic mood disorders in depressed outpatients: diagnosis and response to pharmacotherapy.** Journal of Affective Disorders. 2(2):73-88, 1980.

The relationship between diagnosis of mood disorder using the Research Diagnostic Criteria (RDC) categories and response to pharmacotherapy with antidepressants was examined with 64 patients. Evaluation revealed that only 34% met criteria for an episode of major depressive disorder alone, while 36% met criteria for intermittent depressive disorder, 14% for cyclothymic personality, and 16% for labile personality in addition to being in a current major deprssive episode. There was no differential response to a brief course of antidepressant pharmacotherapy in patients with and without chronic minor mood disorders. Most patients showed an improvement during the 4 week course of treatment. The presence of chronic minor mood disorder does not appear to be a contraindication for use of medication in patients who also are currently experiencing a major depressive episode. 23 references. (Author abstract modified)

000625 Rybakowski, Janusz; Kapelski, Zdzislaw; Strzyzewski, Wlodzimierz. Katedra i Klinika Psychiatrii AM, ul. Szpitalna 27/33, 60-572 Poznan, Poland **/The usefulness of the erythrocyte lithium index in the evaluation of disorders of ion transfer in patients with depressive syndromes./** Przydatnosc wskaznika krwinkowego litu dla oceny zaburzen transportu jonowego u chorych z zespolami depresyjnymi. Psychiatria Polska. 13(3):217-222, 1979.

In vivo investigation of the erythrocyte lithium index was conducted in 60 patients with manic-depressive psychosis receiving prophylactic lithium carbonate treatment and in 20 controls receiving lithium for 3 weeks. Higher index values were found in patients with manic-depressive psychosis, particularly in women. In vitro tests of the activity of passive lithium diffusion into the red blood cells showed that patients with manic-depressive psychosis had a tendency toward lower index values. Results show that patients with manic-depressive psychosis are characterized by a different electrolyte transfer through the erythrocyte membrane, a fact that may be associated with the presumed defect in the activating functions on the neurophysiological level. 14 references. (Journal abstract modified)

000626 Rydzynski, Z.; Gruszczynski, W. Institute of Mental Hygiene, Military Academy of Medicine, Lodz, Poland **Viloxazine in the treatment of depressive states.** Activitas Nervosa Superior. 21(3):146-147, 1979.

Results of an open test of the effects of viloxazine in the treatment of depressive states, and of a double blind study of the effects of viloxazine, amitriptyline, and bimanol on depression are described. In the open test (n=52), full and/or partial improvement was found in only 29 patients, and 62% of Ss developed more or less in tensive side-effects. In the comparative study, amitriptyline was most effective in reducing depression, viloxazine had the most side-effect, and bimanol had the lowest therapeutic effect and side-effects.

000627 Sampath, G.; Rao, B. S. Sridhara Rama; Channabasavanna, S. M.; Subash, M. National Institute of Mental Health and Neuro Sciences, Bangalore, India **Intra and extra erythrocyte lithium ion concentration ratios in manic patients.** Indian Journal of Psychiatry. 22(2):176-178, 1980.

Red blood cell to lithium ion concentration ratios of 12 manic drug responders and four manic nonresponders were compared on day 26 of lithium therapy. Responders were found to have higher lithium ratios than nonresponders. There was however no cutoff value which could differentiate lithium responders from nonresponders. Results are discussed with reference to previous studies of lithium response in bipolar affective illness. 15 references. (Author abstract modified)

000628 Shingu, Kazushige; Kawai, Itsuo; Yamada, Koichi. Dept. of Neurology and Psychiatry, Otsu Red Cross Hospital, Otsu, Japan **Three cases of unipolar delusional depression responsive to L-dopa.** Folia Psychiatrica et Neurologica Japonica. 33(4):511-515, 1979.

Three cases of unipolar delusional depression which were responsive to L-dopa are described. These cases followed a characteristic two stage clinical course. Anxiety and agitation with persecutory delusions predominated the picture at first, but they were soon replaced by severe psychomotor retardation or stupor associated with delusions of poverty and guilt. The administration of L-dopa in the latter stage brought about a rapid improvement both in mood and psychomotor activity. These cases are discussed in relation to recent biochemical studies of affective psychosis. 25 references. (Author abstract modified)

000629 Singh, Gurmeet. Dept. of Psychiatry, Government Medical College, Patiala-147 001, India **Sintamil in the treatment of depression: a comparison of single vs. divided dose administration.** Indian Journal of Psychiatry. 22(2):195-199, 1980.

The comparative efficacy of a single dose (SD) at bedtime versus a divided dose (DD, three times daily) of nitroxazepine hydrochloride was evaluated in a 4 week double-blind trial in 57 patients with depressive illness (endogenous or reactive). Total dosage over the trial was 75mgm. Posttrial Hamilton scores and global clinical assessments were virtually identical for SD and DD Ss. At the end of 6 weeks (with dosages increased up to 150mgm where needed) recovery rates were 88% in the SD group and 79% in the DD group. Overall response rate to nitroxazepine was 82%. Adverse side-effects were reported by

36% of the Sd and 29% of the DD group; side-effects were generally mild and did not necessitate termination of treatment. Constipation was reported more often in the SD group, while dryness of mouth and dizziness were more frequent in the DD group. 10 references.

000630 Soucek, K.; Krulik, R.; Zatecka, I. Department of Psychiatry, Charles University, Ke Karlovu 11, 128 21 Prague 2, Czechoslovakia **The efflux of lithium from red blood cells and the effect of lithium prophylaxis.** Activitas Nervosa Superior. 21(3):166-168, 1979.

The rate of lithium efflux from red blood cells was investigated in seven manic-depressive patients with good response to lithium prophylaxis, seven manic-depressive patients nearly or absolutely nonresponding to lithium prophylaxis, and in 11 control Ss. The utility of the efflux rate as an indicator of lithium prophylaxis was also evaluated. The levels of lithium efflux from red blood cells were higher in the patients than in the control Ss due to the effects of long-term lithium therapy, but no difference was found between the lithium responders and lithium nonresponders. 8 references.

000631 Spiker, Duane G.; Edwards, David; Hanin, Israel; Neil, John F.; Kupfer, David J. Western Psychiatric Institute and Clinic, 3811 O'Hara Street, Pittsburgh, PA 15261 **Urinary MHPG and clinical response to amitriptyline in depressed patients.** American Journal of Psychiatry. 137(10):1183-1187, 1980.

The utility of baseline urinary 3-methoxy-4-hydroxyphenylglycol (MHPG) excretion as a predictor of amitriptyline response was evaluated in 18 rigorously diagnosed depressed patients. Neither age nor severity of depression before treatment correlated with MHPG excretion. There was also no significant correlation between baseline MHPG excretion and clinical response at the end of at least 25 days' treatment with amitriptyline. On the basis of findings, it is concluded that there are patients with normal or high baseline MHPG excretion who fail to respond to amitriptyline in spite of an adequate trial. The relevance of data regarding amitriptyline and nortriptyline plasma levels to MHPG and to the noradrenergic/serotonergic theories of depression is also discussed. 33 references. (Author abstract modified)

000632 Stewart, Jonathan W.; Quitkin, Frederic; Fyer, Abby; Rifkin, Arthur; McGrath, Patrick; Liebowitz, Michael; Rosnick, Lyle; Klein, Donald F. Dept. of Psychiatry, Columbia University School of Medicine, New York, NY 10027 **Efficacy of desipramine in endogenomorphically depressed patients.** Journal of Affective Disorders. 2(3):165-176, 1980.

The hypothesis was tested that there are two biochemical subgroups of endogenously depressed patients, those deficient in serotonin and those deficient in noradrenalin, who respond differently to antidepressants. Endogenomorphically depressed patients were treated first with the noradrenergic agent desipramine (DMI), then, if still depressed, randomized to continued DMI or the serotonergic agent clomipramine (CMI). Of 27 patients completing at least 4 weeks of DMI treatment, 23 responded. With only four nonresponders, the CMI part of the study was abandoned. Since DMI strongly blocks neuronal reuptake of catecholamines with little effect on serotonin reuptake, the results suggest that endogenomorphic depressives may have a relatively homogeneous catecholamine deficiency. Mean blood levels drawn at equivalent DMI dose indicate that patients appear to respond to DMI across a wide range of blood levels and suggest the absence of a narrow therapeutic window. 43 references. (Author abstract modified)

000633 Strian, F.; Albert, W.; Klicpera, C. Max-Planck-Institut fur Psychiatrie, Klinisches Institut, Kraepelinstrasse 10, D-8000 Munich 40, Germany **Antidepressive treatment and mood swing patterns in endogenous depression.** Pharmakopsychiatrie Neuro-Psychopharmakologie. 12(6):432-437, 1979.

In 105 patients with endogenous depression treated with antidepressants or electroconvulsive therapy, the course of the depressive state was evaluated by means of a self-rating mood scale (Befindlichkeits-Skala, von Zerssen, 1976). The scale was filled out every second day, and the course of the depressive mood was computed by various algorithms for each patient. Two different courses of depressive mood could be identified: some patients showed a relatively continuous decline in the depressive mood, whereas others showed strong fluctuations. It is suggested that there is an interaction between treatment effects and spontaneous rhythms. 14 references. (Author abstract modified)

000634 Svestka, J.; Nahunek, K.; Ceskova, E.; Rysanek, R.; Misurec, J. Psychiatric Clinic, 657 15 Brno-Bohunice, Czechoslovakia **Controlled comparison of mianserine with imipramine in endogenous depressions.** Activitas Nervosa Superior. 21(3):147-148, 1979.

The effects of mianserine and imipramine in the treatment of endogenous depression were examined in a double-blind study. Forty-two inpatients received mianserine (26 to 89mg per day) and 40 inpatients received imipramine (52 to 176mg per day). Mianserine therapy produced full remission of the AB type in 26% and partial remission type-C in 28% of the patients, while imipramine achieved full remission in 50% and partial improvement in 37%. Results do not confirm data in the literature as to identical antidepressant effects of mianserine and imipramine, neither in clinical nor EEG evaluations. 3 references.

000635 Takahashi, Ryo. Dept. of Neuropsychiatry, Nagasaki University School of Medicine, Nagasaki, Japan **Lithium treatment in affective disorders: therapeutic plasma level.** Psychopharmacology Bulletin. 15(4):32-35, 1979.

A presentation describing the relationship between plasma lithium level and efficacy and side-effects in the treatment of acute mania and depression in Japan in comparison with that in the United States is summarized. The paper was delivered at the Seventeenth Annual Meeting of the American College of Neuropsychopharmacology, held in Maui, Hawaii, December 11 to 13, 1978. It was found that while the efficacy rate of lithium therapy in Japanese patients is comparable to that in the U.S., Japanese patients require a lesser amount of lithium carbonate for the same degree of efficacy, and they respond at a lower serum lithium level than their U.S. counterparts. The incidence of severe side-effects, and the toxicity with lithium therapy, do not clearly differ between the two populations. A discussion of this presentation by Robert F. Prien is provided. 11 references.

000636 Takahashi, Ryo; Nakane, Yoshibumi; Akiyama, Akinori. Dept. of Neuropsychiatry, Nagasaki University School of Medicine, Nagasaki, Japan **Lithium treatment in affective disorders from viewpoint of transcultural psychopharmacology: therapeutic plasma level.** Folia Psychiatrica et Neurologica Japonica. 33(4):501-509, 1979.

Double-blind controlled studies of lithium treatment of affective disorders in Japan are reviewed and compared with comparable studies in the United States. No significant correlations between clinical effectiveness and serum lithium levels in manic or depressed patients were found. It is noted that Japanese patients seem to require less lithium carbonate than their U.S. counterparts as an effective therapeutic dose, both in terms of mean maximum dose and serum level. Methodological considerations in transcultural psychopharmacology are discussed. 40 references. (Author abstract modified)

000637 Tuomisto, Jouko; Tukiainen, Erkki; Ahlfors, U. G. Dept. of Pharmacology and Toxicology, University of Kuopio, P.O.B. 138, SF-70101 Kuopio 10, Finland **Decreased uptake of 5-hydroxytryptamine in blood platelets from patients with endogenous depression.** Psychopharmacology. 65(2):141-147, 1979.

Uptake of 5-hydroxytryptamine (5-HT) was studied using blood platelets from 13 patients with endogenous depression and 13 healthy volunteers. An improved method with a short incubation time and low substrate concentration was used, and the incubation was performed in Krebs-Henseleit buffer at 37 degrees C. A clear difference in 5-HT uptake by blood platelets was noted, with uptake in platelets of depressed patients at 56% of the uptake rate in platelets of healthy control Ss. After a 4 week treatment with imipramine, a competitive inhibition of 5-HT uptake with an increased Km was seen; after a similar treatment with amoxapine there was little change in 5-HT uptake. Amoxapine was inferior to imipramine as an inhibitor of 5-HT uptake, also in vitro. There was no difference in clinical recovery in these treatment groups. Results are discussed in relation to potential biological differences between depressed patients and normal persons. 39 references. (Author abstract modified)

000638 Tyrer, P. J.; Lee, I.; Edwards, J. Guy; Steinberg, B.; Elliott, E. J.; Nightingale, J. H. Mapperley Hospital, Porchester Road, Nottingham NG3 6AA, England **Prognostic factors determining response to antidepressant drugs in psychiatric out-patients and general practice.** Journal of Affective Disorders. 2(3):149-156, 1980.

The outcome of treatment with 10 different antidepressant drugs was measured in 200 patients, 145 seen in psychiatric outpatient clinics and 55 in general practice, after 4 weeks of therapy. The results of the 200 patients taken together suggest that prognosis was largely determined by factors dependent on the natural history of the disorder and that clinical symptoms were unimportant. However, when the results for patients in each drug group were analyzed separately, symptoms were more important than natural history factors. It is concluded that clinical symptoms are only important predictors of response to antidepressant drugs when the patients studied are homogeneous with regard to natural history factors, particularly duration of illness. 18 references. (Author abstract modified)

000639 Umezawa, Yoichi; Ogura, Chikara; Shimoyama, Shyoshi; Oda, Dai; Sugihara, Kanichiro; Tsuchie, Harutaka; Kuba, Shyusaku; Shimoyama, Naoko. Dept. of Neuro-Psychiatry, Tottori University School of Medicine, Yonago 683, Japan **Follow-up study on the influence of an antipsychotic drug (propericiazine) on liver function, electrocardiogram and electroencephalogram.** Kyushu Neuro-psychiatry. 25(1):11-21, 1979.

The effects of the antipsychotic drug, propericiazine on liver function ECG and EEG were investigated in 49 patients who had received the drug as their primary mediation from December 1975 to July 1977. The percentage of subjects who showed abnormality of liver function was 79.2%. The number of subjects who had an abnormality of alkaline phosphatase was significantly (p less than .05) greater in subjects receiving a high average daily dose than in subjects receiving a low one. The heartrate was significantly (p less than .01) decreased during therapy. However, a significant relationship between the decrease in heartrate and the drug was not detected. Slowing of the EEG was found after 6 months' treatment, although there was no significant difference. 23 references. (Author abstract modified)

000640 Vandel, B.; Vandel, S.; Allers, G.; Bechtel, P.; Volmat, R. Laboratoire de Pharmacologie Clinique, Centre Hospitalier et Universitaire, F-25030 Besancon-Cedex, France **Interaction between amitriptyline and phenothiazine in man: metabolite nortriptyline and the correlation with clinical response.** Psychopharmacology. 65(2):187-190, 1979.

The effects of the interaction between amitriptyline (AT) and phenothiazine in humans on plasma concentrations of AT and its metabolite nortriptyline (NT) and on clinical response were investigated. AT and NT plasma levels were checked in 86 depressed patients treated with AT by oral or i.m. administration. Fifty-six patients were also treated with a phenothiazine. In 20 of these patients receiving AT i.m. with a phenothiazine, the plasma level of NT (and the variability of these levels between patients) were higher than in nine patients receiving the antidepressant drug alone at the same dosage and by the same route. In 11 patients receiving AT orally with a phenothiazine, the plasma level of NT (and the variability of these levels between patients) were higher, and the ration of plasma levels of AT and NT were lower than in eight patients receiving the antidepressant drug alone at the same dosage and by the same route. These results suggest an increase of the demethylation of AT and/or a decrease of the hydroxylation of NT and/or a decrease of its elimination. The differences in the variability of the plasma levels of AT and NT could be due to a saturation of the enzymatic system of biotransformation of the antidepressant drug by phenothiazine and to a first pass effect when the drug is given orally. The correlation between the plasma levels of AT and NT and the clinical effect was studied. The correlation between the NT plasma level and the clinical response seems to be more curvilinear when AT is associated with a phenothiazine. A potentialization of the postsynaptic alpha receptor blocking effect of NT by the neuroleptic drug is suggested. 18 references. (Author abstract modified)

000641 Versiani, Marcio. Av. N. S. de Copacabana, 1.133, conj. 1.303, 22070 Rio de Janeiro, Brazil **/Therapeutics (II): lithium./** Terapeutica (II): litio. Jornal Brasileiro de Psiquiatria. 29(1):9-15, 1980.

The use of lithium in the treatment of bipolar or unipolar manic-depressive psychoses is examined. The most favorable treatment with lithium is initiated with low dosages, aimed at attaining a serum level between 0.7 and 1.2mEq/L. The serum level is measured four times during the first month, followed by once every month. The most frequent side-effects are: fine tremor of hands, loose stool, polyuria, polydipsia, weight gain, edema and hypothyroidism. Vomiting and diarrhea are signs of impending intoxication which progresses to a severe neurologic syndrome that may end in neurologic sequelae or in death. It is concluded that treatment with lithium, conducted carefully, is a safe procedure and which, due to its efficacy, is one of the best treatments for psychosis yet discovered. 10 references. (Journal abstract modified)

000642 Vinar, O. K ovcinu 1519, 182 00 Prague 8, Czechoslovakia **Clinical experience with nomifensine.** Activitas Nervosa Superior. 21(3):143-145, 1979.

An open study of the effects of nomifensine on 41 depressed outpatients is described. The 9 men and 32 women patients were diagnosed as follows: endogenous depression (19), depression in schizophrenia (8), depression in organic brain syndrome (6), depression in endocrine disease (2), psychogenic depression (2), depression in character disorder (3), and depression in thylism (1). A decrease in depressive symptoms measured by the FKD rating scale following nomifensine is reported. In 32 patients, there was good remission of symptoms, in three patients there was an amelioration of symptoms, and in six patients there was no remission or amelioration of symptoms. It is concluded that nomifensine is effective in the treatment of mild depression without severe anxiety. 6 references.

000643 Vinar, O.; Topiar, A.; Muronova, J. K ovcinu 1519, 182 00 Prague 8, Czechoslovakia **Trazodone in depressions.** Activitas Nervosa Superior. 21(3):148-150, 1979.

Results of an open study of the effects of trazodone, a trazolopyridine derivative with antidepressant properties, in treating depression among 36 outpatients and of a controlled comparison of the effects of trazodone and imipramine are described. In the open study, a statistically significant decrease in scores on 19 items of the FKD rating scale (Vinar, 1966) was found. In the controlled comparison, both imipramine and trazodone significantly reduced depressive symptomatology, with no significant differences in treatment efficacy between the two groups. The most frequent side-effect of trazodone appears to be somnolence. 9 references.

000644 White, Kerrin; Pistole, Tom; Boyd, Jeffrey L. Dept. of Psychiatry and the Behavioral Sciences, School of Med., 1934 Hospital Pl., Los Angeles, CA 90033 **Combined monoamine oxidase inhibitor-tricyclic antidepressant treatment: a pilot study.** American Journal of Psychiatry. 137(11):1422-1425, 1980.

In a pilot study, 30 newly hospitalized patients meeting Research Diagnostic Criteria of major or minor depressive disorder were randomly assigned to open treatment according to fixed dosage steps with: 1) amitriptyline alone, up to a maximum dose of 300mg/day; 2) tranylcypromine alone, up to a maximum dose of 40mg/day; or 3) the combination of amitriptyline up to 150mg/day plus tranylcypromine up to 20mg/day. For 28 patients, this protocol continued for 4 weeks or until discharge. As measured by the Hamilton and Zung depression scales, patients in all three treatment groups improved equally. The combination tricyclic antidepressant plus monoamine oxidase inhibitor treatment produced a nonsignificantly higher frequency of minor side-effects, none of which required discontinuation of treatment. The results indicate the feasibility and safety of further controlled clinical research with combined treatment, although caution is advised. 16 references. (Author abstract modified)

000645 Yamaguchi, Naohiko; Tanimoto, Kenji; Kuromaru, Shoshiro. Dept. of Psychiatry and Neurology, Kobe University School of Medicine, 12 Kusunoki-cho 7-chome, Ikuta-ku Kobe 650, Japan **Growth hormone (GH) release following thyrotropin-releasing hormone (TRH) injection in manic patients receiving lithium carbonate.** Psychoneuroendocrinology. 5(3):253-259, 1980.

The effect of intravenous injection of synthetic thyrotropin releasing hormone (TRH) on plasma growth hormone (GH) was investigated in six patients in the manic state and five normal volunteers, both before and during lithium treatment, for 3 to 4 weeks. TRH caused a significant increase in plasma GH in four out of six manic patients during lithium treatment. TRH only raised plasma GH in one patient before lithium treatment. No appreciable change was noted in normal Ss either before or during lithium treatment. The positive GH responses to TRH in manic patients on lithium were observed 90 to 120 min after TRH except for one patient. The delayed GH response may be caused by secondary effects of TRH on brain monoamine neurotransmitters, rather than by a direct action of TRH on the pituitary. 34 references. (Author abstract modified)

000646 Yamashita, Itaru; Asano, Yutaka. Dept. of Psychiatry and Neurology, Hokkaido University School of Medicine, Sapporo, Hokkaido, Japan **Tricyclic antidepressants: therapeutic plasma level.** Psychopharmacology Bulletin. 15(4):40-41, 1979.

A presentation reporting results of a 1978 survey of psychiatrists of main Asian countries regarding therapeutic dosages of various psychotropic drugs including tricyclics is summarized. The paper was delivered at the Seventeenth Annual Meeting of the American College of Neuropsychopharmacology, held in Maui, Hawaii, December 11 to 13, 1978, is summarized. It was found that the dose levels of antidepressants in Asain countries are much lower than those in the U.S. which often go up to 300mg per day or more. Four possibilities which may account for these differences are examined. At present there appears to be no adequate physiological explanation for the differences in clinical response to tricyclics between American and Asian peoples. It is assumed that many factors, biological as well as social, are combined to produce differences in the use of antidepressant drugs among the nations. 4 references.

10 DRUG TRIALS IN NEUROSES

000647 Libusova, E.; Libus, J. Psychiatric Clinic, Havlickuv Brod, Czechoslovakia **Our experience with tofisopam (Grandaxin Egypt).** Activitas Nervosa Superior. 21(3):154, 1979.

Clinical trials of tofisopam (Grandaxin Egypt) with 25 neurasthenic women and 26 healthy persons were conducted. Effects of the drug were evaluated via analysis of EEGs and responses to the KN5 questionnaire. EEG changes after tofisopam were mild, with little difference between the effects of a low (50mg) and high (200mg) dose. Seventy-two percent of neurasthenic patients improved, with mitigation of neurotic difficulties without fatigue. Changes in mood following drug administration to the healthy Ss included euphoria, polylalia, and excitation with nonconcentration.

000648 Maletzky, Barry, M. 1345 Southeast Harney Street, Portland, OR 97202 **Anxiolytic efficacy of alprazolam compared to diazepam and placebo.** Journal of International Medical Research. 8(2):139-143, 1980.

The anxiolytic effects of alprazolam (0.5 to 3 mg), diazepam (5 to 60 mg), and placebo were evaluated in 86 outpatients suffering from moderate to severe psychoneurotic anxiety, in a 28 day double-blind study. Efficacy was evaluated using five rating instruments, three rated by the physician (Hamilton Anxiety Rating Scale, Physician's Global Impressions, and Target Symptoms) and two by the patients (Self-Rating Symptom Scale and Patient's Global Impressions). Alprazolam was more effective than placebo on all five measures of efficacy and, on several parameters, more effective than diazepam as well. The incidence of side-effects was lowest in the alprazolam group and decreased steadily over the course of the study, whereas the incidence in the diazepam and placebo groups remained relatively unchanged. 6 references. (Author abstract)

000649 McNair, Douglas M.; Barrett, James E. Clinical Psychopharmacology Laboratory, Division of Psychiatry, Boston University School of Medicine, 80 E. Concord St., Boston, MA 02118 **Two Bass Scale factors and response to placebo and anxiolytic drugs.** Psychopharmacology. 65(2):165-170, 1979.

Responses of two groups to the Bass Social Acquiescence Scale, a measure previously shown to correlate positively with placebo response and negatively with anxiolytic drug response were subjected to factor analysis. The two factors appeared very similar in separate analyses of data from samples of 941 psychiatric outpatients and 1,837 college students. Also, results are pesented which indicate that one factor, tentatively labeled traditionalism, accounted for the empirically observed relationships to placebo and drug response in two clinical trials. 14 references. (Author abstract modified)

000650 Moser, Liselotte; Dellen, R. G.; Lundt, P. V. Medizinpsychologische Forschungsgruppe fur Arzneimittelprufung, Hamburger Strasse 10, D-5000 Cologne 51, Germany **/The effect of betadrenol on examination anxiety./** Die Wirksamkeit

von Betadrenol bei Prufungsangst. Medizinische Klinik. 74(41):1500-1504, 1979.

The effect of betadrenol on examination anxiety was tested in a double-blind study in which the examination situation was simulated. The sample consisted of 60 normal students. After a control examination without prior treatment, each subject was placed on one of three regimens: 1) a single dose of either 40 or 100mg of betadrenol, 2) a benzodiazepine derivative at the recommended dosage, or 3) a placebo. A second different examination was given 1 hour later. Heartrate, blood pressure and skin resistance were measured continually throughout this second examination, which increased progressively in complexity from beginning to end. The increase in heartrate was significantly lower in the betadrenol treated subjects than in those given the benzodiazepine derivative or the placebo. Blood pressure changes in the three groups were analogous to the heartrate changes. In response to betadrenol, subjective feelings of well-being increased, and concomitant increases in skin resistance were observed. These changes were contrasted with the lack of any observable changes after placebo and with deterioration after benzodiazepine administration. Improvement in mental alertness in the betadrenol group differed significantly from that of the subjects in the benzodiazepine group. There was also improvement in reaction times. These results show that betadrenol can reduce examination anxiety. Betadrenol was far more effective than a benzodiazepine derivative in all the parameters tested, including psychomotor performance relating to operation of a motor vehicle. 12 references. (Journal abstract modified)

000651 Navratil, J.; Komenda, S. Department of Pathological Physiology, Dr. S. Allende Str. 3, 775 15 Olomouc, Czechoslovakia **Therapeutic application of physostigmine in neurosis.** Activitas Nervosa Superior. 21(3):158-159, 1979.

The therapeutic efficacy of physostigmine in the treatment of neurosis was investigated via analysis of responses of 85 neurotic outpatients (primarily exhibiting neurasthenic symptoms) to the N5 questionnaire (Hausner, 1965). The questionnaire was administered before treatment and at 3 day intervals thereafter. Results indicate that physostigmine treatment yielded significant improvement in five symptom areas: neurasthenia, anxiety, phobias, self-concept, and autonomic symptoms. 8 references.

000652 no author. no address **Pills for nerves.** Lancet. No. 8200:897, 1980.

Categorization of chronic minor affective symptoms (anxiety, depression, and psychosomatic complaints) and their treatment with psychotropic drugs is discussed. While the nature of these neurotic disorders has not changed in the past 200 years, their management has. Formal categorizations of these symptoms has become bogged down in controversy, and treatment is even more controversial and covers the whole range from encounter groups to somatic therapies. Because these conditions are common, commercial pressure to create new markets for drugs to treat anxiety cum depression has been great. Both single and combined drugs abound and lead the field among prescribed medications. The nature of the combination preparations suggests that the pharmaceutical industry regards anxiety and depression as mixed phenomena rather than separate entities. Comparative studies of treatment response to antidepressant and/or anxiolytic drugs in patients with symptoms of anxiety, depression, or both have yielded mixed results. Further research in this area is recommended. 12 references.

000653 Okuse, Satoshi. First Dept. of Internal Medicine, Sapporo Medical College, Minami 1, Nishi 16, Chuo-ku, Sapporo City 060, Japan **Studies on the comprehensive medical treatment of peptic ulcers (3) -- utilization of tranquilizers in the treatment of gastric ulcers.** Japanese Journal of Psychosomatic Medicine. 20(3):200-208, 1980.

In a multiclinic study, the effect of clotiazepam (30mg daily for 8 weeks) on the psychoneuroendocrine function and healing processes was studied in 29 inpatients with active gastric ulcers of more than 10 mm in diameter. Results indicated that treatment with clotiazepam was helpful in 93.1% of the cases; the therapeutic spectra covered various anxiety and hypochondrial symptoms. An acceleration of the healing process was also disclosed: of 11 cases with psychosocial stress, 45.5% were found to be healed by the end of week 4, 63.3% at the end of week 6, and 90.9% at the end of week 8; in comparison, patients without psychosocial stress rates were 27.8%, 38.9%, and 83.3%, respectively. There was a significant reduction in manifest anxiety scores among the psychosocial stress subjects. The results showed that treatment utilizing tranquilizers can be effective in treatment of gastric ulcer patients with psychosocial stress, and suggested that the stabilization of psychoneuroendocrine function (including normalization of the circadian rhythm of blood corticosteroid) achieved by the drug influenced and promoted early healing of the ulcer. 15 references. (Journal abstract modified)

000654 Preiningerova, O.; Zapletalek, M.; Kudrnova, K.; Svejkovska, J. Psychiatric Clinic, Charles University, 500 36 Hradec Kralove, Czechoslovakia **Clinical experience with low doses of haloperidol in the treatment of neuroses.** Activitas Nervosa Superior. 21(3):136, 1979.

A 10 day, dougle-blind, cross-over study of the effects of low doses of haloperidol (0.5 to 2mg daily) on 30 neurotic inpatients and outpatients is described. No statistically significant differences were found between placebo and halperidol effects on global score of the N5 questionnaire. The influence of haloperiodl was most pronounced on anxiety and neurasthenia. Most frequent side-effects were tachycardia, hypotension, and somnolence. Autonomic function failed to show marked changes in the tonus or in excitability levels.

000655 Rickels, Karl; Csanalosi, Irma; Greisman, Paul; Mirman, Merrill J.; Morris, Richard J.; Weise, Charles C.; Weiss, George. 203 Piersol Building, Hospital of the University of Pennsylvania, 3400 Spruce St., Philadelphia, PA 19104 **Ketazolam and diazepam in anxiety: a controlled study.** Journal of Clinical Pharmacology. 20(10):581-589, 1980.

Ketazolam (both in once daily and three times daily dosing), diazepam, and placebo were compared for effectiveness in relieving anxious symptomatology in a clinical trial conducted with a total of 222 anxious, nonpsychotic outpatients. Results indicate that improvement occurred early in treatment, that ketazolam was equally effective in both dosage forms, and that ketazolam was similar in effect to diazepam. Ketazolam and diazepam were found significantly better than placebo in alleviating symptoms of anxiety, as measured by the Hamilton Anxiety Scale, the Covi Anxiety Scale, and a physician rated measure of global improvement. 10 references. (Author abstract modified)

000656 Snyder, Scott. Dept. of Psychiatry, Baylor College of Medicine, Texas Medical Center, Houston, TX 77030 **Amitriptyline therapy of obsessive-compulsive neurosis.** Journal of Clinical Psychiatry. 41(8):286-289, 1980.

Substantial improvement is reported in two patients with obsessive-compulsive neurosis who were treated with amitriptyline. No other pharamacologic or psychologic intervention had previously been effective. This tricyclic antidepressant has a pharmacologic spectrum of action very similar to chlorimipramine. Both drugs cause significant impairment in serotonin (5-hydroxytryptamine) reuptake. Evidence for a relative deficit in

the central availability of 5-HT in obsessive-compulsive phenomena is presented, and a rationale for use of these agents is included. 19 references. (Author abstract modified)

000657 Turner, Samuel M.; Hersen, Michel; Bellack, Alan S.; Andrasik, Frank; Capparell, Homer V. Western Psychiatric Institute and Clinic, 3811 O'Hara Street, Pittsburgh, PA 15261 **Behavioral and pharmacological treatment of obsessive-compulsive disorders.** Journal of Nervous and Mental Disease. 168(11):651-657, 1980.

Single case experimental designs were used to evaluate behavioral and pharmacological treatments in obsessive-compulsive disorders. Four patients was treated in variants of the ABAB withdrawal design using behavioral and self-report data as dependent variables. Three of the four patients responded to behavioral or pharmacological treatment, whereas one patient responded to neither intervention. 20 references. (Author abstract)

000658 Vinar, O.; Dostalova, J.; Krsiak, M.; Reznicek, V.; Ivanys, E. K ovcinu 1519, 182 00 Prague 8, Czechoslovakia **Controlled comparison of the therapeutic effects of natrium oxybutyrate and oxazepam.** Activitas Nervosa Superior. 21(3):156-158, 1979.

A 1 week, double-blind, controlled comparison of the therapeutic effects of natrium oxybutyrate (OXB) and oxazepam in the treatment of 103 neurotic outpatients is described. Symptomatology was evaluated with the N5 questionnaire (Hausner et al., 1965) at pretreatment and after a week of drug administration. Neurasthenic, anxious, and depressed neurotic subgroups improved significantly following treatment with OXB, oxazepam, and placebo. Although no conclusions concerning the therapeutic efficacy of OXB and oxazepam are possible, some patients improved quite satisfactorily. 8 references.

11 DRUG TRIALS IN MISCELLANEOUS DIAGNOSTIC GROUPS

000659 Andersen, J.; Aabro, E.; Gulmann, N.; Hjelmsted, A.; Pedersen, H. E. Frederiksborgvej 102, DK-4000 Roskilde, Denmark **Anti-depressive treatment in Parkinson's disease: a controlled trial of the effect of nortriptyline in patients with Parkinson's disease treated with L-Dopa.** Acta Neurologica Scandinavica. 62(4):210-219, 1980.

The therapeutic effort of nortriptyline on neurological and depressive symptoms manifested by 19 parkinsonism patients being treated with L-dopa was assessed. Results of the double-blind, cross-over study indicate that nortriptyline had a clinically significant effect on depressive symptoms, but was without effect on neurological parameters. It is suggested that depression in Parkinson's disease is of both reactive and endogenous origins. Results indicate that relative large proportion of patients with Parkinson's disease would benefit from tricyclic antidepressants, whether or not they are receiving treatment with L-dopa. 39 references. (Author abstract modified)

000660 Anhalt, Herbert S.; Young, Robert; Roginsky, Martin. Nassau County Medical Center, 2201 Hemstead Turnpike, East Meadow, NY 11554 **Double-blind comparison of ketazolam, diazepam and placebo in once-a-day vs T.I.D. dosing.** Journal of Clinical Psychiatry. 41(11):386-392, 1980.

Results are presented from comparison of ketazolam given once a day with diazepam given three times a day and placebo given either once or three times a day to 101 anxious outpatients. The findings showed that ketazolam is significantly better than placebo in alleviating the symptoms of anxiety and, on several measures of efficacy, better than diazepam as well. Significantly fewer patients on ketazolam, a new long-acting benzodiazepine derivative, dropped out of the study due to ineffective medication than did Ss in the three other treatments. The incidence of side-effects was lowest in the ketazolam group. Of particular note, drowsiness was reported twice as often by diazepam patients as by ketazolam patients. 15 references. (Author abstract modified)

000661 Arai, Sakae; Niwa, Gennosuke; Maekawa, Kihei; Imaeda, Kazuo; Osawa, Kieko; Wako, Michiko. Okura National Hospital, Tokyo, Japan **Anticonvulsants and treatment of epilepsy.** Iryo. 34(2):124-129, 1980.

The serum levels of anticonvulsants were determined in 145 epileptic children (1 to 18 years) during one year at a pediatric service in Okura National Hospital in a study of anticonvulsants in the treatment of epilepsy. The clinical pharmaceutical approach (side effect, interaction of anticonvulsants, drug history, and mothers' opinion about their children taking anticonvulsants) was also carried out by a clinical pharmacist. Serum levels of pehnobarbitol were correlated with daily dosage of anticonvulsants per kilogram. Serum levels of diphenylhydantoin were low compared with daily dosage. It is concluded that the clinical pharmaceutical approach in cooperation with doctors is useful for the treatment of epilepsy. 6 references. (Author abstract modified)

000662 Aubree, J. C.,; Lader, M. H. Lader: Institute of Psychiatry, De Crespigny Park, Denmark Hill, London SE5 8AF, England **High and very high dosage antipsychotics: a critical review.** Journal of Clinical Psychiatry. 41(10):341-350, 1980.

Studies concerning the relative effectiveness of standard and high dosage antipsychotic drugs are reviewed. Uncontrolled studies suggest that some psychotic patients responded to high but but not to low drug dosage. Extrapyramidal effects seemed the same as with standard dosage. Fourteen controlled trials suggest some superiority of the high dosage over standard antipsychotic drug dosage but that extrapyramidal effects are more common. It is concluded that a minority of psychotic patients may benefit from high doses of neuroleptic medication, pharmacokinetic factors possibly being important. 74 references. (Author abstract modified)

000663 Bartova, D.; Nahunek, K.; Svestka, J.; Hajnova, R. Psychiatric Clinic, Jihlavska 104, Brno-Bohunice, Czechoslovakia **Comparative study of prophylactic lithium and diethylstilbestrol in sexual deviants.** Activitas Nervosa Superior. 21(3):163-164, 1979.

The efficacy of prophylactic lithium and diethylstilbestrol (DES) in the treatment of sexual deviants are described. Forty patients (39 men and one woman) were treated with lithium for periods between 2 and 33 months. During litium therapy there were three relapses, two of which were due to patient noncompliance. It is noted that in the treatment of sexual deviants, side-effects are a crucial factor, being the most frequent cause for patients' refusal to continue medication. Deleterious side-effects of lithium and DES are compared. Results indicate that litium is at least as effective as DES, although recidivism tends to occur at an earlier stage of treatment.

000664 Bittner-Manicka, Maria; Wasilewski, Ryszard. Klinika Neurologiczna AM, Lindleya 4, 02-005 Warsaw, Poland **/Preliminary evaluation of the effects of Depakine in epilepsy./** Wstepna ocena dzialania Depakiny w padaczce. Neurologia i Neurochirurgia Polska. 13/29(1):31-36, 1979.

The effects of the anticonvulsant valproic acid (Depakine) were studied clinically. A total of 52 outpatients, 16 to 55 years old, who had suffered from epileptic seizures for 2 to 40 years, were given daily doses of 30 to 1,200mg of the drug. The treat-

ment of seven patients had to be discontinued because of drug intolerance. Except for two, the patients who continued the treatment (28 females and 17 males) had been treated previously with all types of epileptic drugs available on the Polish market, but without success. It was found that Depakine improved the clinical condition of about 60% of the patients. The drug had a beneficial effect on patients suffering from generalized epileptic seizures and seizures without convulsions. Depakine was, to a lesser extent, effective in cases of partial complex seizures, a result in harmony with reports published by some other authors. It is concluded that Depakine also brings basic EEG recording to a normal level. Focal changes may sometimes occur or increase, but do not usually improve until later on during the treatment. The drug has a good effect on the patients' mental condition. About 15% of the cases showed side-effects to the drugs, but there was no clearly toxic effect on the liver or kidneys. 17 references. (Journal abstract modified)

000665 Blaha, L.; Burkard, G.; Lehrl, S.; Kapinas, K. Einheit fur Klinische Pharmakologie, Universitats-Nervenklinik, Schwabachanlage 6/10, D-8520 Erlangen, Germany **/Psychopathometric double-blind course study with nicergoline versus placebo in geriatric patients with transient syndromes./** Psychopathometrische Doppelblind-Verlaufsstudie mit Nicergolin versus Plazebo bei geriatrischen Patienten mit leichteren Durchgangs-Syndromen. Arzneimittel-Forschung. 29(8a):1295-1301, 1979.

A double-blind study of the therapeutic effectiveness of 10-methoxy-1,6-dimethyl-ergoline-8beta-methanol-(5-bromonicotinate) (nicergoline), an antihypoxidotic ergot alkaloid, in 56 gerontopsychiatric inpatients suffering from cerebral metabolic and nutritional disturbances, is reported. After a washout phase of 8 days, patients in the experimental group received three 10mg doses of nicergoline per day for a period of 12 weeks. Physiological and self-report data for the first 4 weeks, for eight experimental patients and nine placebo patients are presented. Data from the following measures (syndrome short test, repeating figures and letters, reading letters, scale for general somatic discomfort, scale for vegetative functional disturbances) indicate a tendency towards improvement under the treatment with nicergoline compared to placebo. It is noted that these data are insufficient to clearly determine the effectiveness of nicergoline in patients with cerebrovascular insufficiency. 17 references. (Journal abstract modified)

000666 Charney, Dennis S.; Kleber, Herbert D. 34 Park St., New Haven, CT 06508 **Iatrogenic opiate addiction: successful detoxification with clonidine.** American Journal of Psychiatry. 137(8):989-990, 1980.

The use of clonidine to detoxify an iatrogenic opiate addiction secondary to chronic pain is reported. The case history of a 51-year-old woman, addicted to an oxycodone combination (Percodan) is presented. In this case, clonidine almost completely blocked the emergence of the abstinence syndrome, presumably by reducing norepinephrine turnover in the central nervous system. Therapeutic implications of the report are considered. 9 references.

000667 Cohen, Sidney. Neuropsychiatric Institute, School of Medicine, University of California, Los Angeles, CA 90024 / **Therapeutic aspects of marihuana./** Therapeutic aspects. In: Petersen, R., Marijuana research findings: 1980. Washington, GPO, DHEW Pub. No. (ADM) 80-1001, 1980. 225 p. (p. 199-221).

The therapeutic potential of marihuana is discussed. Twelve categories of symptoms or of disease states are considered: glaucoma, asthma, antiemetic, epilepsy, tumor growth, topical antibiotics, antianxiety and insomnia, muscle relaxant, preanesthetic, pain, depression, and alcoholism and drug dependence. Major findings include: 1) cannabis appears to have definite but not invariable antinauseant and antiemetic capabilities, 2) cannabis prolongs barbiturate sleeping time, reduces REM sleep periods, and may increase Stage IV sleep, 3) much of the analgesic effect of delta9-THC may be in its 11-hydroxy metabolite, but the overall results do not suggest that marihuana is superior to analgesics currently in use, and 4) results of several clinical double-blind studies on the effect of marihuana on depression have been inconclusive though some evidence of mood elevation and tranquilization has been reported. 80 references.

000668 Craft, M. J.; Schiff, A. A. Bryn-y-Neuadd Hospital, Llanfairfechan, Gwynedd LL33 OHH, Wales **Psychiatric disturbance in mentally handicapped patients: a prospective study of current clinical usage of depot fluphenazine in hospitals for the mentally handicapped.** British Journal of Psychiatry. 137(September):250-255, 1980.

A 12 week study of fluphenazine decanoate depot injections was conducted in 102 mentally handicapped and severely mentally handicapped patients with behavior disorders and superadded mental illnesses, which in most cases had not responded adequately to oral medication. Some of the patients had additional complications of epilepsy, organic brain damage, and physical handicaps. Highly signifiant overall improvements occurred, irrespective of such factors as the patients age, sex, degree of mental handicap, or coexistence of epilepsy or brain damage. Hyperpyrexia was not encountered. Extrapyramidal disturbances in 22 of the patients were mostly well controlled by antiparkinson medication; 8 of the 12 patients with pretrial extrapyramidal abnormalities lost these during the study. Fluphenazine decanoate injections proved a reliable drug delivery system, which may improve difficult behavior and enable mentally handicapped patients to be more responsive to behavior shaping exercises aimed at improving long-term personality adjustment. 8 references. (Author abstract)

000669 Cunha, Jomar M.; Carlini, E. A.; Pereira, Aparecido E.; Ramos, Oswaldo L.; Pimentel, Camilo; Gagliardi, R.; Sanvito, W. L.; Lander, N.; Mechoulam, R. Dept. de Psicobiologia, Escola Paulista de Medicina, Rua Botucatu 862, 04023 Sao Paulo, Brazil **Chronic administration of cannabidiol to healthy volunteers and epileptic patients.** Pharmacology. 21(3):175-185, 1980.

The effects of cannabidiol (CBD) were studied in healthy volunteers and in patients with secondary generalized epilepsy with temporal focus. These patients were not reacting satisfactorily to antiepileptic drugs prescribed for them, but were maintained on the drugs throughout the experiment. All Ss tolerated CBD very well, and no serious side-effects or toxicity were detected. Of the eight epileptic patients given CBD, four remained almost free of convulsive crises and three showed partial improvement. Only one of the eight epileptic patients given placebo showed clinical improvement. The potential use of CBD as an antiepileptic drug or to potentiate other antiepileptic drugs is discussed. 52 references. (Author abstract modified)

000670 Damasio, Hanna; Lyon, Lynn. Dept. of Neurology, University of Iowa College of Medicine, Iowa City, IA 52242 **Lithium carbonate in the treatment of cluster headaches.** Journal of Neurology. 224(1):1-8, 1980.

Twenty-one patients with cluster headaches were examined in an open trial to assess the effectiveness of lithium carbonate in the acute treatment and prevention of cluster headaches. Three women and 18 men ranging from 28 to 70 years of age were divided into episodic cluster and chronic cluster. In 11 patients there was absolute improvement, in 5 patients there was partial

improvement and in 5 patients there was either no response or the improvement was not sustained. Beneficial results were obtained with dosages lower than those used for effective treatment of bipolar illness. It appears that lithium can be a useful drug in the treatment of cluster headaches provided drug levels and renal function are carefully monitored. No serious side effects are noted. 24 references. (Author abstract modified)

000671 Dolansky, J. Dept. of Child Neurology, Institute for Postgraduate Education of Physicians and Pharmacologists, Prague, Czechoslovakia **Pyritinol administration as part of epilepsy treatment in children.** In: Benesova, O., 21. Annual Czechoslovak Psychopharmacological Meeting. Jesenik Spa, Czechoslovakia, 1979. 140 p. (p. 90-95).

The treatment of 64 children with epileptic seizure disorder using a combined treatment of antiepileptic drugs, vitamins B6 and B12, and oral pyrithioxine is discussed. Epilepsy in children is discussed as a pathological process involving behavioral, vegetative, biochemical and electrophysiological signs; and the energy demands of the epileptic process are noted. In 35 patients whose clinical state had been fully compensated for a number of months, but who began to decompensate without apparent cause during critical periods, administration of pyrithioxine proved effective in 24; nine patients did not respond to this treatment, and in two, symptoms were aggravated. In responders treatment lasted for 8 to 12 weeks and was repeated in critical periods for 4 to 6 weeks. In 30 children in whom different therapy combinations had never succeeded in fully compensating, pyrithioxine was always a part of the overall treatment. The possible positive effects in these cases could not be precisely established because of the complex therapy involved: in three patients, however, addition of pyrithioxine led to a full compensation of generalized astatic/myoclonic epilepsy, which had never been achieved with classical antiepileptic treatment alone.

000672 Dysken, Maurice W.; Berecz, John M.; Samarza, Alane; Davis, John M. Illinois State Psychiatric Institute, Chicago, IL 60612 **Clonidine in Tourette syndrome.** Lancet. No. 8200:926-927, 1980.

The effects of clonidine, in doses ranging from .05 to .25 mg/day, on total tic frequencies were investigated in a 38-year-old patient with childhood onset (30 yr duration) Tourette syndrome, using a double-blind, placebo controlled design. A blind rater determined total tic frequencies in the patient 3 to 4 times a week for 8 months. There was no significant reduction in total tic frequencies for any dose of clonidine. Compared with baseline data, tic frequency increased significantly with dose; but compared with placebo, total tic frequency did not change significantly, suggesting a negative placebo effect. Thus, results fail to confirm the efficacy of clonidine in an adult patient with a long history of this neurological disorder. 2 references.

000673 Eisler, Toomas; Calne, Donald B.; Ebert, Michael H.; Kopin, Irwin J.; Ziegler, Michael G.; Levine, Robert; Murphy, Dennis L. Experimental Therapeutic Branch, National Institute of Neurological and Communicative Disorders and Stroke, Bethesda, MD 20205 **Biochemical measurements during (-)deprenyl treatment of parkinsonism.** In: Singer, T., Monoamine oxidase. New York, Academic Press, 1979. 557 p. (p. 497-505).

Data are presented from the 4 week treatment of nine parkinsonian patients with (-)deprenyl, a monoamine oxidase (MAO) inhibitor which prevents the indirect sympathomimetic effect of tyramine, in vivo and in vitro. This is the first such inhibitor without the so called cheese effect and is considered to be a safe drug for humans. Levels of amines in platelets, plasma and CSF, CSF metabolites, and urine were analyzed. Marked inhibition of platelet MAO-B activity was found, while there were no significant changes in platelet catecholamine levels. Plasma epinephrine levels were significantly reduced, and CSF fluid dopamine was increased significantly. Both homovanillic acid and MHPG levels in urine showed a significant decrease. Findings confirm the selectivity of (-)deprenyl in inhibiting CNS and platelet MAO-B activity without altering MAO-A activity in parkinsonian patients. 22 references.

000674 Filipova, M.; Balik, J.; Filip, V.; Rodny, J.; Krejcova, H. Filip: Psychiatric Research Unit, Ke Karlovu 11, 128 21 Prague 2, Czechoslovakia **Electroretinographic changes in patients with parkinsonism treated with various classes of antiparkinsonian drugs.** Activitas Nervosa Superior. 21(3):136-138, 1979.

Electroretinographic (ERG) changes in patients with parkinsonism who were treated with various classes of antiparkinsonian drugs were investigated. ERGs of Ss treated with dopamine receptor stimulating drugs (L-DOPA or amatadine), Ss treated with anticholinergic drugs, and Ss free of parkinsonism were compared. The ERG was recorded in artifical mydriasis and after 5 minutes of dark adaptation. Results indicate that patients with parkinsonism have an increased b-wave amplitude of ERG, no matter what kind of antiparkinsonian treatment they are receiving.

000675 Fovall, Penny; Dysken, Maurice W.; Lazarus, Lawrence W.; Davis, John M.; Kahn, Robert L.; Jope, Richard; Finkel, Sanford; Rattan, Pradeep. Research Dept., Illinois State Psychiatric Institute, Chicago, IL 60612 **Choline bitartrate treatment of Alzheimer-type dementias.** Communications in Psychopharmacology. 4(2):141-145, 1980.

A double-blind, placebo controlled study was conducted of the effects of choline bitartrate on intellectual performance in five patients with early Alzheimer type dementia. Three doses of choline bitartrate (8gm, 12gm, and 16gm) were given for 2 weeks each with a 2 week placebo period either preceding or following the drug period. Cognitive testing was administered during a baseline period and thereafter once a week for the duration of the study. Comparing drug condition with placebo, significant improvement for auditory and visual word recognition at 12gm per day of choline bitartrate was found. The mean plasma choline level nearly doubled from baseline to 12gm per day. These results suggest improvement in some aspects of cognitive performance during choline bitartrate treatment. 20 references. (Author abstract)

000676 Gadow, Kenneth D. no address **Children on medication: a primer for school personnel.** Reston, VA, Council for Exceptional Children, 1979. 108 p.

Fundamental information about psychoactive medications and their effects on children are presented in a format geared towards school personnel. Basic pharmacotherapy concepts, including an overview of the major types of psychoactive medications and a description of how drugs are metabolized are detailed. Critical issues surrounding dosage, side-effects, drug interactions, and tolerance are also introduced. Major childhood disorders and the psychotropic drugs most commonly used in their treatment are reviewed. For each drug, definitions and classification schemas, prevalence estimates, intended behavioral effects, unintended side-effects, and general treatment patterns and practices are summarized.

000677 Gerbino, Lou; Shopsin, Baron; Collora, Maria. Dept. of Psychiatry, Neuropsychopharmacology Research Unit, New York University Medical Center, New York, NY 10016 **Clozapine in the treatment of tardive dyskinesia: an interim report.** In: Fann, W., Tardive dyskinesia. New York, SP Medical and Scientific Books, 1980. 531 p. (p. 475-489).

The effectiveness of clozapine, one of the dibenzoxazepines, in treating tardive dyskinesia and intractable extrapyramidal symptoms in psychiatric patients (schizophrenics and patients with depressive neurosis) was investigated. The results show that clozapine is a highly effective agent, with the best outcome obtained by a gradual but steady buildup of dosage so that the patient can develop tolerance to side-effects. Clozapine appears clinically and pharmacologically unique as an antipsychotic in several respects: it does not produce extrapyramidal symptoms and is an effective treatment for tardive dyskinesia that is unresponsive to other forms of treatment. It also appears that if the psychosis remits, clozapine may be withdrawn without the occurrence of TD symptoms. Clozapine also differs from others in its antidopaminergic properties in specific brain regions. 28 references.

000678 Gittelman, Rachel; Abikoff, Howard; Pollack, Edith; Klein, Donald F.; Katz, Sidney; Mattes, Jeffrey. New York State Psychiatric Institute, New York, NY 10032 **A controlled trial of behavior modification and methylphenidate in hyperactive children.** In: Whalen, C., Hyperactive children. New York, Academic Press, 1980. 407 p. (p. 221-243).

The comparative effects of using methylphenidate and behavior modification, alone or combined, with hyperactive children were studied. Assessment consisted of teacher ratings using the Conners Teacher Rating Scale, parent reports, and classroom observations using a modified version of an observation code originally devised by Tonick et al (1973). Operant behavior therapy was implemented both in the home and school, following procedures described by O'Leary and O'Leary (1972). Methylphenidate dosage ranged from 10mg to 60mg per day, with an average daily dose of 38.2mg. All treatments produced significant clinical improvement, but the combination of methylphenidate and behavior therapy (21 Ss) was regularly the best treatment, methylphenidate alone (21 Ss) was next, and behavior therapy with placebo (19 Ss) was the least effective.

000679 Glasgow, Gavin. Dept. of Neurology, Auckland Hospital, Auckland, New Zealand **Pregnancy and epilepsy: should anticonvulsant drugs be continued?** Current Therapeutics. 21(1):11-12, 14, 1980.

The use of anticonvulsant drugs in pregnant women with epilepsy is examined. Research is reviewed and it is concluded that the case against anticonvulsant medication is weak. The majority of the studies failed to prove that there is a dysmorphogenic effect. It is argued that convulsions in early pregnancy may even be more harmful than anticonvulsant medication and that by the time pregnancy is established any dysmorphogenic effect will have occurred already. 6 references.

000680 Gouzou, A. no address **/Childhood depression./** La depression de l'enfant. Feuillets Psychiatriques de Liege. 12(3-4):143-156, 1979.

The historical development of clinical treatment of depression in children and the use of antidepressants are described. The psychodynamic approach in this development is examined, with references to Sandler, Freud, Winnicott, and others. Antidepressants are frequently used in treatment of children in spite of the difficulties encountered in diagnosing their depression. It is concluded that adult nosography of depression should not be applied to children. 23 references.

000681 Greenblatt, D. J.; Shader, R. I. Division of Clinical Pharmacology, Box 1007, Tufts-New England Medical Center, Boston, MA 02111 **Effects of age and other drugs on benzodiazepine kinetics.** Arzneimittel-Forschung. 30(5a):886-890, 1980.

The clinical and experimental literature on the effects of age and other drugs on benzodiazepine kinetics is reviewed. In general, altered hepatic clearance in the elderly does not necessarily predict changes in drug sensitivity, since many factors complicate the relation between blood concentrations and clinical response. Drug interactions with benzodiazepine derivatives are relatively uncommon and generally are not of clinical significance. Anatacid coadministration reduces the rate but not the completeness of benzodiazepine absorption. Concurrent therapy with disulfiram impairs the clearance of chlordiazepoxide and diazepam, but not of oxazepam or lorazepam. Kinetic interactions with alcohol have been inconsistently reported, but probably are less important than the predictable additive central depressant effects. 31 references. (Author abstract modified)

000682 Harman, Andrew W.; Frewin, Derek B.; Priestly, Brian G. Frewin: Dept. of Clinical and Experimental Pharmacology, University of Adelaide, South Australia 5000, Australia **Comparative enzyme-inducing effects of chlorpromazine and fluphenazine therapies in psychotic patients.** Psychopharmacology. 69(1):35-37, 1980.

Antipyrine elimination kinetics were measured in psychotic patients receiving long-term treatment with chlorpromazine or fluphenazine decanoate and in nonmedicated controls. Patients given chlorpromazine metabolized antipyrine more rapidly than controls, but no change was seen in patients on fluphenazine. Results suggest that long-term chlorpromazine therapy induced the activity of drug metabolizing enzymes and is more likely than fluphenazine to induce the metabolism of other drugs metabolized by hepatic mixed function oxidase enzymes. 16 references. (Author abstract modified)

000683 Harris, Brian. Dept. of Psychological Medicine, University Hospital of Wales, Cardiff, Wales **Prospective trial of L-tryptophan in maternity blues.** British Journal of Psychiatry. 137(September):233-235, 1980.

Under double-blind conditions, 55 young, bottlefeeding multiparous women were administered L-tryptophan 3g daily or placebo for 10 days after delivery and were also assessed daily for psychiatric symptoms. This treatment did not reduce pospartum mood change (maternity blues), but the mothers' blues scores correlated significantly with the scores for anxiety, depression, and hysteria on the Middlesex Hospital Questionnaire given in the eighth month of pregnancy. Results do not support the hypothesis that low levels of free plasma tryptophan are the cause of mood changes in the puerperium; findings, however, do confirm previous findings of an association of antenatal depressive symptoms with postpartum blues. 12 references. (Author abstract modified)

000684 Hoffmeister, F.; Muller, C. no address **Brain function in old age: evaluation of changes and disorders.** Bayer Symposium VII. Berlin/Heidelberg/New York, Springer, 1979. 533 p. $48.40.

A collection of papers read at a symposium on the evaluation of changes and disorders of brain function in old age is presented, and implications of the clinical and research literature for medical, pharmacological, psychiatric, societal, and political aspects of aging are discussed. Topics discussed include: ontogenetic vs. pathologic origins of these changes; classificatory criteria; psychometric performance and motivation; neuropsychological and physiological assessment; pathophysiological mechanisms involved in the structural or functional alterations of the nerve cells; and pharmacological and pharmacotherapeutic problems concerning cerebral disturbances in the elderly.

000685 Holmstrand, J.; Gunne, L. M. Psychiatric Research Center, Ulleraker Hospital, S-750 17 Uppsala, Sweden **Applica-**

tion of a synthetic enkephalin analogue during heroin withdrawal. Pharmakopsychiatrie Neuro-Psychopharmakologie. 13(2):68-71, 1980.

The effects of 20mg morphine HCL intramuscularly administered and the synthetic metenkephalin analogue FK 33-824 (1.25mg intramuscularly) were compared single-blind in eight addicts undergoing withdrawal from chronic heroin misuse. FK 33-824 was found to reduce withdrawal distress in six subjects, but was less effective than morphine. The effect of FK 33-824 was described as morphine like, an intoxication without euphoria. All eight subjects preferred morphine to FK 33-824 and five stated they would refuse to take another dose of FK 33-824. This difference in preferences, with regard to the two drugs of substitution, may have been due to side-effects of the enkephalin-like compound: a feeling of oppression in the chest and heaviness in muscles. 8 references. (Author abstract)

000686 Hronek, J.; Drahokoupil, L.; Fait, V.; Hudcova, T.; Laciga, Z.; Vankova, H.; Vencovsky, E. Psychiatric Hospital, Dobrany, KUNZ Plzen, Czechoslovakia **Clinical experience with piracetam therapy in gerontology.** In: Benesova, O., 21. Annual Czechoslovak Psychopharmacological Meeting. Jesenik Spa, Czechoslovakia, 1979. 140 p. (p. 121-129).

The effects of piracetam (800 mg daily) were investigated in a double-blind 6 week study of 74 gerontopsychiatric patients with long-term confusional/delirious states with significant intellectual deterioration. An improvement in clinical state was found for both groups: of piracetam patients, 50% were improved, 41% moderately improved or unchanged, and 9% unimproved as compared to 38% improved, 43% moderately improved or unchanged, and 19% deteriorated in the placebo group. While both groups showed improvement on a gerontological rating scale, experimentals showed significantly greater improvement in motor hypoactivity, fatigue prolixity, apathy, clinical state, depression, comprehension, and thinking, and near significant (0.1) improvement in short-term memory. Experimentals showed significantly greater improvement on nurses' ratings of mental state and on a number of memory subtests. Neurological examination and EEG evaluations revealed no significant differences between groups.

000687 Huttenlocher, Peter R.; Mattson, Richard H. Dept. of Pediatrics, University of Chicago, Box 228, 950 East 59th St., Chicago, IL 60637 **Isoprinosine in subacute sclerosing panencephalitis.** Neurology. 29(6):763-771, 1979.

The effects of isoprinosine were examined in 15 children with subacute sclerosing panencephalitis (SSPE), which is characterized by personality changes, dementia, myoclonic seizures, and progressive mental and motor deterioration. The drug had beneficial effects in patients with slowly progressing SSPE, but was ineffective in 5 cases of rapidly progressing SSPE. No side-effects were associated with long-term use of the antiviral agent, except for mild hyperuricemia. 23 references. (Author abstract modified)

000688 Indikt, S. G. Ramenskiy rayonnyy psikhonevrologicheskiy dispanser Moskovskoy oblasti, USSR / **Choice of tactics in treating alcoholic delirium.**/ K voprosu o vybore lechebnoy taktiki pri alkogol'nom delirii. Zhurnal Nevropatologii i Psikhiatrii imeni S. S. Korsakova. 79(3):341-343, 1979.

The effectiveness of treatment of delirium tremens was studied. Six hundred and two patients were observed in the study, which spanned 3 years. The patients were divided into two groups. Detoxification treatment was administered to the first group 397 patients, along with the neuroleptics aminazine tizercine, and haloperidol. The second group (207 patients,) received massive detoxification drop infusions, as well as the tranquilizer diazepam. The indices of lethality and the average duration of hospitalization were used as treatment efficency criteria. In the second group, the lethality rate was 4.4 times less than that in the first group, and duration of treatment was twice as long in the first gorup. The obtained data argue against the use of neuroleptics in the treatment of delirium tremens. 17 references. (Journal abstract modified)

000689 Jensen, John P. A. Dept. of Neurology, Frederiksberg Hospital, DK-2000F Copenhagen, Denmark **Vasopressin therapy in Parkinson's disease.** Acta Neurologica Scandinavica. 62(3):197-199, 1980.

A double-blind, cross-over, pilot study of vasopressin therapy in Parkinson's disease is reported. Six patients with Parkinson's disease received 30i.u. of L-vasopressin intranasally daily for 1 month. Assessments included evaluation according to Webster's rating scale and comprehensive laboratory tests with a 2 week interval, physical examination, EEG, and investigation of mental status according to the Hamilton Psychiatric Rating Scale for Depression. No effects of L-vasopressin treatment were noted. 9 references. (Author abstract modified)

000690 Kalvach, Z.; Chumchal, O. Psychiatric Hospital, Prague 8, Czechoslovakia **A case of trigeminal neuralgia treated with lithium carbonate.** Activitas Nervosa Superior. 21(3):168, 1979.

A case study of the treatment of long standing trigeminal neuralgia with lithium carbonate is presented. The attacks of pain disappeared after lithium carbonate treatment was started, and lithium carbonate treatment was continued for 15 months. During this time, a 3 month period of deterioration was observed, but accessory treatment with nortriptyline and thioridazine effectively reduced the attacks. Lithium carbonate treatment is recommended in cases of trigeminal neuralgia where neurosurgical intervention is contemplated.

000691 Kanowski, S.; Paur, R. Abt. fur Gerontopsychiatrie, Psychiatrische Klinik der Freien Universitat, Reichsstrasse 15, D-1000 Berlin 19, West Germany /**Experience with fluspirilene in gerontopsychiatry.**/ Erfahrungen mit Fluspirilene in der Gerontopsychiatrie. Pharmakopsychiatrie Neuro-Psychopharmakologie. 13(3):137-143, 1980.

An open study of fluspirilene administration in 10 previously untreated female outpatients with paranoid symptomatology, who were of advanced age (56 to 81 years old), is reported. In eight of the patients who were included in the 12 week study, a remission of symptoms was observed, particularly delusional dynamics, delusional intuitions, delusional perceptions, and restlessness, as well as excitement. The therapy failed in two patients. Preexisting cerebroorganic impairments showed some deterioration, whereas vegetative and extrapyramidal side-effects were of only moderate intensity. Hence, fluspiriline proved to be a depot neuroleptic with good antipsychotic effect in outpatient treatment of paranoid psychoses in elderly patients. However, in patients with preexisting organic brain syndromes, the obviously sedating and retarding effects of this drug must be taken into account, since they may contribute to further disturbance of the impaired cerebral function. 16 references. (Journal abstract)

000692 Kazamatsuri, Hajime. Dept. of Psychiatry, Teikyo University School of Medicine, 11-1, Kaga 2-chome, Itabashi-ku, Tokyo 173, Japan **Treatment of tardive dyskinesia with oxypertine -- preliminary clinical experience and a brief review of the literature.** Comprehensive Psychiatry. 21(5):352-357, 1980.

Based on the hypothesis that an enhanced dopaminergic activity in the basal ganglia may play an important role in tardive

dyskinesia, the clinical efficacy of oxypertine, an indole derivative that has both dopamine depleting activity and antipsychotic activity, for the treatment of tardive dyskinesia was studied in 10 patients for 3 weeks. Oxypertine was shown to have marked antidyskinetic effect in seven patients. These results is taken to suggest a new approach to the symptomatic control of tardive dyskinesia with oxypertine. Recent studies describing clinical efficacy of oxypertine for involuntary movements of tardive dyskinesia are also briefly reviewed including a controlled trial where, unlike dimethylaminoethanol and sodium valproate, oxypertine was shown to be statistically significantly superior to placebo on both the AIMS scores and global ratings. 16 references. (Author abstract)

000693 Kelly, Patrick J.; Gillingham, F. John. 1275 Delaware Ave., Buffalo, NY 14209 **The long-term results of stereotaxic surgery and L-dopa therapy in patients with Parkinson's disease: a 10-year follow-up study.** Journal of Neurosurgery. 53(3):332-337, 1980.

The long-term results of stereotaxic surgery and L-dopa therapy were examined in 60 patients with Parkinson's disease, who were examined every 2 years for a total followup period of 10 years. Although stereotaxic surgery had been extremely effective in treating tremor and rigidity the other manifestations of Parkinson's disease were noted to affect more patients progressively at each followup examination. L-dopa therapy was instituted in 36 patients after 1968. The effect of L-dopa on bradykinesia was noticeable, but the long-term benefit on the other manifestations of Parkinson's disease was negligible. In most cases L-dopa became progressively ineffective for bradykinesia after 3 to 5 years. L-dopa-induced tremor and involuntary movements were less frequently noted in limbs contralateral to the side of a previous stereotaxic procedure. It was concluded that in patients presenting with tremor and rigidity as the major problem in their parkinsonian syndrome, the most effective form of palliative therapy is stereotaxic surgery, and that L-dopa should be reserved for management of bradykinesia. 20 references. (Author abstract)

000694 Koskiniemi, Marjaleena; Hyyppa, Markku; Sainio, Kimmo; Salmi, Tapani; Sarna, Seppo; Uotila, Lasse. Dept. of Neurology, University of Helsinki, Helsinki, Finland **Transient effect of L-tryptophan in progressive myoclonus epilepsy without Lafora bodies: clinical and electrophysiological study.** Epilepsia. 21(4):351-357, 1980.

The effect of L-tryptophan in progressive myoclonus epilepsy (PME) without Lafora bodies was examined with five familial and two sporadic patients. L-tryptophan improved the clinical condition in six out of seven patients. Clinical improvement in ambulation, myoclonic jerks, and general condition was most evident. In visual assessment of EEGs, the amount of paroxysmal activity and dysrhythmia of the background activity decreased in six patients. Findings indicate that therapy with serotonin precursors is worthy of further trial in PME and that deficient tryptophan metabolism may play a part in the etiology of PME without Lafora bodies. 27 references. (Author abstract modified)

000695 Kowalczyk, Krystyna. Wojewodzki Szpital Zespolony, Oddzial Neurologiczny, ul. Arkonska 4, Szczecin, Poland / **Social and clinical significance of determining the barbiturate level in the blood serum of patients treated with antiepileptic drugs./** Spoleczna i kliniczna waga oznaczania poziomu barbiturano w surowicy krwi u pacjentow leczonych lekami przeciwpadaczkowymi. Psychiatria Polska. 13(3):243-249, 1979.

The barbiturate level in the blood serum of 160 patients of an antiepileptic outpatient clinic who had shown no improvement despite systematic treatment over at least 1 year was examined. In order to find out whether the patients were taking antiepileptic drugs (mainly barbiturates) and conforming to therapeutic recommendations, the blood serum barbiturate level was determined two to three times in each patient every few weeks over 15 months. Data show that determination of the content of antiepileptic drugs helps avoid errors in rating the ability of patients to work. It is concluded that determination of the blood serum barbiturate level in epileptics is an objective examination facilitating controlled treatment and it should be examined in all cases refractory to treatment. (Journal abstract modified)

000696 Kurokawa, Toru; Yokota, Kiyoshi; Mitsudome, Akihisa; Shibata, Rumiko; Takashima, Sachio; Goya, Nagahide. Dept. of Pediatrics, Faculty of Medicine, Kyushu University, Fukuoka, Japan **Diagnostic and prognostic significance of electroencephalography with intravenous diazepam in epilepsy.** Folia Psychiatrica et Neurologica Japonica. 33(1):15-20, 1979.

The diagnostic and prognostic significance of EEG response to intravenous diazepam was investigated in 30 children with intractable epilepsy. Suppression of seizure discharges as bilaterally poor in 75% of the cases with infantile spasms and 89% of cases with Lennox syndrome and other generalized seizures, while it was unilaterally poor in 80% of cases with focal or unilateral seizures. ACTH or steroid therapy was clinically and electroencephalographically effective in 80% of the cases with good suppression responses; and of 11 cases with poor suppresion eight (73%) were resistant to therapy, and nine showed no EEG improvement. Results suggest that EEG with intravenous diazepam is valuable for understanding the pharmacophysiological mechanism of epilepsy. Use of this technique may make possible the selection of cases as candidates for ACTH or steroid therapy. 13 references. (Author abstract modified)

000697 Langevin, R.; Paitich, D.; Hucker, S.; Newman, S.; Ramsay, G.; Pope, S.; Geller, G.; Anderson, C. Clarke Institute of Psychiatry, 250 College Street, Toronto, Ontario, Canada, M5T 1R8 **The effect of assertiveness training, Provera and sex of therapist in the treatment of genital exhibitionism.** Journal of Behavior Therapy and Experimental Psychiatry. 10(4):275-282, 1979.

The effects of assertiveness training, Provera (Medroxyprogesterone) and sex of therapist in the treatment of male genital exhibitionists were examined with three experiments. The results of one study showed dropout rate for Provera plus assertion therapy was significantly increased over assertion therapy alone. There was a trend to a higher recidivism rate for female over male therapists. The other two studies showed that serum testosterone was significantly reduced by Provera but penile responsiveness was not affected. It is suggested that Provera is limited in the treatment of genital exhibitionism. 28 references. (Author abstract modified)

000698 Lieberman, A.; Kupersmith, M.; Neophytides, A.; Casson, I.; Durso, R.; Foo, S. H.; Khayali, M.; Bear, G.; Goldstein, M. Dept. of Neurology, NYU Medical Center, 550 First AVe., New York, NY 10016 **Long-term efficacy of bromocriptine in Parkinson disease.** Neurology. 30(5):518-523, 1980.

Twenty-eight patients with Parkinson's disease were treated with bromocriptine for at least 2 years, after first being treated with levodopa alone or in combination with carbidopa for an average of 7.4 years. All patients were showing increasing disability at the time bromocriptine was initiated. The addition of bromocriptine (mean daily dose, 56mg) to the levodopa treatment resulted in improvement in 21 of the patients, and this im-

provement was at least partially maintained for 2 years. 50 references. (Author abstract modified)

000699 Lienert, G. A.; Wall, K. D. Fachbereich 11 (Psychologie), Universitat Erlangen-Nurnberg, Regensburgerstr. 160, D-8500 Nuremberg, Germany **/Efficacy and pattern-valence of psychoactive drugs: a new method of comparing drugs applied to identical patients in randomized order./** Wirksamkeit und Wertigkeit von Psychoenergetika: eine neue Methode des Vergleichs von Arzneimitteln, die denselben Patienten in Zufallsfolge verabreicht wurden. Arzneimittel-Forschung. 30(8):1302-1306, 1980.

A numerical procedure for drug comparison is presented, and illustrated based on the administration of three stimulants to 40 volunteers. Psychoactive drugs are defined as equally effective if they produce equal proportions of positive reactions in a sample of N-individuals where each individual is treated, in random sequence, with each of m-drugs. Equally effective drugs are defined as equally valent if they exert equal effects in the subsample of N1-individuals reacting on just one drug out of m-drugs and equally effective in the subsample of N2-individuals reacting on two out of m-drugs, etc. to the subsample of NM-1-individuals reacting on m-1 out of m-drugs. Indices of effectivity and of potency are proposed and tested for differences by suitable tests. 14 references. (Journal abstract modified)

000700 Loeb, C.; Roccatagliata, G.; Albano, C.; Besio, G. Dept. of Neurology, Via De Toni 5, I-16132 Genoa, Italy **Bromocriptine and dopaminergic function in Huntington disease.** Neurology. 29(5):730-734, 1979.

In 10 patients with Huntington's disease, bromocriptine in daily doses below 40mg led to clinical improvement and increased levels of homovanillic acid (HVA) in the cerebrospinal fluid (CSF). However, larger doses of bromocriptine worsened chorea and decreased HVA in the CSF. Results suggests that bromocriptine acts as a partial dopamine antagonist at low doses but as a direct dopamine receptor stimulating agent at high doses. 31 references. (Author abstract modified)

000701 Lossius, Rasmus; Dietrichson, Per; Lunde, Per Knut M. Dept. of Neurology, Ulleval sykehus, Oslo 1, Norway **Effect of diazepam and desmethyldiazepam in spasticity and rigidity: a quantitative study of reflexes and plasma concentrations.** Acta Neurologica Scandinavica. 61(6):378-383, 1980.

The effects of diazepam and desmethyldiazepam on phasic and tonic ankle reflex activity was investigated in nine patients, seven with spasticity due to multiple sclerosis and two patients with Parkinsonian rigidity. Diazepam and desmethyldiazepam both had a normalizing effect on the increased phasic ankle reflex seen in spasticity. No effect was observed on the increased tonic reflexes in rigidity. The concentrations of diazepam necessary to reduce spasticity ranged between 300 and 2,200mg/l and were so high that drowsiness occurred. Desmethyldiazepam had a higher potency and a longer lasting effect on the increased phasic reflexes than did diazepam. 12 refereces. (Author abstract modified)

000702 Mansikka, M.; Kangas, L.; Kanto, J. Kanto: Leiras Pharmaceutical Plant, P.O. Box 145, 20101 Turku 10, Finland **A comparative study on the clinical effects of flunitrazepam and lorazepam.** International Journal of Clinical Pharmacology, Therapy and Toxicology. 18(7):320-321, 1980.

The clinical effects of flunitrazepam and lorazepam as oral premedicants were tested in a double-blind study on 81 gynecological patients. Flunitrazepam showed a higher sedative effect, but in regard to other parameters tested, no significant differences were found (sleep, apprehension, excitement, dizziness, emetic effect, headache, increase or decrease in systolic blood pressure, increase in pulse rate, venipuncture). In nine percent of the patients treated with lorazepam, a prominent muscular relaxation with slurred speech was observed, but in none was observed in the cases treated with flunitrazepam. The results support the earlier claims of flunitrazepam's relatively specific sedative property, but on the whole the difference in the clinical effects of these benzodiazepine derivatives is not marked. 7 references. (Author abstract)

000703 Martin, Peter R.; Kapur, Bhushan M.; Whiteside, Edwin A.; Sellers, Edward M. Sellers: Addiction Research Foundation, 33 Russell St., Toronto, Ontario M5S 2S1, Canada **Intravenous phenobarbital therapy in barbiturate and other hypnosedative withdrawal reactions: a kinetic approach.** Clinical Pharmacology and Therapeutics. 26(2):256-264, 1979.

Phenobarbital (0.03 to 0.04mg/kg/minute) was infused intravenously in seven patients with clinical hypnosedative withdrawal reactions until the patients slept but were arousable. The mean infusion time to reach this clinical end point was 7.8 hours, the total dose 992mg, and the peak serum phenobarbital concentration 26.1mcg/ml. The mean serum half-life was 57.5 hours for hypnosedative abusers, compared to 86 hours for normal Ss. Results suggest that slow infusion of large amounts of phenobarbital provides a safe, efficacious single dose treatment for hypnosedative withdrawal reactions. 18 references. (Author abstract modified)

000704 McDonald, R. J. Fachbereich Klinische Forschung, Department Neuropsychopharmakologie, Schering AG, D-1000 Berlin/Bergkamen, Germany **Hydergine: a review of 26 clinical studies.** Pharmakopsychiatrie Neuro-Psychopharmakologie. 12(6):407-422, 1979.

Twenty-six clinical drug trials that investigated the effectiveness of Hydergine, a dihydrogenated ergot alkaloid used frequently in geriatric psychopharmacology, are reviewed. Thirty-two symptoms were assessed in six or more studies, and 13 of these were improved significantly with Hydergine in at lest 50% of the studies. Therapeutic benefits occurred in the areas of cognitive dysfunctions, mood depression, and the composite scores as measured by subjective clinical behavioral rating scales. 72 references. (Author abstract modified)

000705 Mikes, F.; Boshart, G.; Ganz, A. J.; Waser, P. G. Pharmacological Institute, University of Zurich, CH-8006 Zurich, Switzerland **3-Chloro-4-(phenylsuccinimido)-benzenesulfonamide (GS 385), a new anticonvulsant: its quantitative determination, pharmacokinetics and metabolism using high performance liquid chromatography.** Arzneimittel-Forschung. 29(10):1583-1588, 1979.

A high performance liquid chromatographic method (SPLC) involving dual wave length detection was developed for the determination of a new anticonvulsant, 3-chloro-4-(phenylsuccinimido)-benzenesulfonamide (GS 385) and three of its metabolites. The concentrations of GS 385 in blood samples from epileptic patients under chronic treatment with this drug was found in the range of 8 to 11 microgram/ml. Pharmacokinetic curves of GS 385 blood levels in rats receiving single doses of the drug showed a maximum concentration of 22 to 23 micrograms/ml 1.5 hours after oral application. The quantity of GS 385 in rat feces, bile, and brain was also estimated. The p-hydroxy and acid metabolites of GS 385 were detected in both rat feces and bile, whereas only the acid metabolites were found in rat urine. 9 references. (Author abstract modified)

000706 Missik, T.; Molcan, J.; Konikova, M.; Novotny, V. Psychiatrische Abteilung OUNZ, Nitra, Czechoslovakia **/Tofizopam in the treatment of chronic alcoholism./** Tofizopam in der Be-

handlung des chronischen Alkoholismus. Activitas Nervosa Superior. 21(3):153-154; 1979.

A clinical study of the effect of tofizopam on chronic alcoholism was conducted. Ss were 30 patients with advanced alcoholism, 3 women and 27 men, with an average age of 39.3 years. The average MAST questionnaire score was 40.6 and the average duration of alcohol abuse was 12.3 years. Tofizopam, a relatively new benzodiazepine preparation, was administered in tablet form in a daily dosage of 150 to 300mg depending on the relative symptomatology. A 3 week placebo interval preceded the treatment and basal biochemical data were obtained for each patient. Subjective evaluation of complaints was done according to questonnaire-N and the occurrence of undesirable symptoms monitored with the Vinar DVP scale. The results revealed a clinical improvement in all cases. The initial questionnaire-N global score of 29.8 fell to 11.7 after treatment. Best effects were achieved in reducing sleep disturbances, sweating, irritation, complaining mood, tension and fears about health. It was found that tofizopam has a good effect on psychopathological symptomatology, clearly influences somatic symptoms, inhibits the onset of delirium and is nontoxic.

000707 Molcan, J.; Kolibas, E.; Caplova, T.; Novotny, V.; Heretik, A. University Clinic of Psychiatry, Bratislava, Czechoslovakia **Possibilities of influence on the organic psychosyndrome with nootropic drugs in chronic alcoholism.** In: Benesova, O., 21. Annual Czechoslovak Psychopharmacological Meeting. Jesenik Spa, Czechoslovakia, 1979. 140 p. (p. 117-120).

The effects of nootropic drugs on the diverse phenomena of organicity were examined in 20 psychiatric inpatients with a diagnosis of chronic alcoholism who received either pyritinol (200 mg, three times per day) or piracetam (400 mg, three times per day) for 21 days. Results indicate that both drugs resulted in subjective improvement of concentration and attention, memory, and feelings of fatigue. Additionally, pyritinol positively influenced irritability and piracetam led to the revival of spontaneous activity. Psychodiagnostic testing indicated that both drugs had similar positive effects on tremor, motor coordination, and intelligence test performance. An improvement in concentration of attention and mnestic performances was also found in patients receiving piracetam. EEG evaluation indicated a relatively low incidence (20%) of pathological manifestations, and a similar percentage of lowered vigilance. Three of the piracetam patients showed hypersynchronic phenomena suggesting a higher paroxysmal tendency that will require further investigation. 7 references.

000708 Moore, Daniel C.; Bowers, Malcolm B., Jr. Dana Psychiatric Clinic, Yale-New Haven Hospital, 789 Howard Avenue, New Haven, CT 06504 **Identification of a subgroup of tardive dyskinesia patients by pharmacologic probes.** American Journal of Psychiatry. 137(10):1202-1205, 1980

In an attempt to elucidate the apparent heterogeneity of tardive dyskinesia (TD) patients with respect to their fit with the cholinergic/dopaminergic imbalance theory, the responses of 10 patients with TD to intravenous challenge doses of drugs that facilitate or inhibit acetylcholine transmission (physostimine and benztropine, respectively) were measured. Responses of these patients to an open outpatient trial of deanol were also measured subsequently. It was found that the responses of half the patients followed the classic theory, two responded paradoxically, and three responded inconsistently. Taken in conjunction with previously reported findings, results suggest the existence of a major subgroup (40% to 50% of patients with TDs) of patients who fit the imbalance theory. More research is needed to identify the subgroups who do not. 23 references. (Author abstract modified)

000709 Moore, Stan L. Nebraska Psychiatric Institute, 602 South 45th St., Omaha, NE 68105 **Satyriasis: a case study.** Journal of Clinical Psychiatry. 41(8):279-281, 1980.

Satyriasis, or pathologic hypersexuality in males, is described, and a case example given. A 24-year-old male presented with the symptoms, and after a search for organic etiology proved unsuccessful, the patient was treated with medroxyprogesterone acetate and psychotherapy with good results. The differential diagnosis, psychodynamics, and treatment are discussed. It is contended that this rare complaint requires attention when the increased libido causes the patient to feel that it is disrupting his life or if related inappropriate behavior comes to the attention of the criminal justice system. 15 references. (Author abstract modified)

000710 Pegram, Vernon; Hyde, Pam; Linton, Patrick. University of Alabama, CDLC 904 Neurosciences Program, Birmingham, AL 35233 **Chronic use of triazolam: the effects on the sleep patterns of insomniacs.** Journal of International Medical Research. 8(3):224-231, 1980.

The effects of the triazolobenzodiazepine hypnotic, triazolam (.6 mg), when given over 3 weeks were evaluated in six otherwise healthy adult insomniacs in a 32 night double-blind sleep study. Results show that both acute and chronic triazolam administration were effective in decreasing sleep latency, increasing sleep duration and sleep efficiency, and decreasing total wake time without producing major effects on sleep staging. Sleep stage 1 and 2 were significantly altered, but in a positive direction, primarily as a result of the significant decrease in sleep onset. Deep sleep and REM were not significantly changed during triazolam treatment, nor was there any evidence of REM rebound after discontinuation of the medication. It was noted that some of the sleep parameters measured shifted toward baseline measures in the first night after triazolam treatment was terminated. However, the total recovery period recorded (7 days) showed the quality and quantity of sleep obtained to be improved over baseline measures. The recovery data compared favorably with those improvements noted during chronic administration. Further, 3 weeks of .5 triazolam usage did not result in tolerance to its hypnotic properties. 13 references. (Author abstract modified)

000711 Pflug, B.; Hartung, M.; Klemke, W. Universitats-Nervenklinik, Osianderstrasse 22, D-7400 Tubingen, West Germany **/The influence of lithium carbonate on mood and performance in healthy subjects./** Die Beeinflussung von Befindlichkeit und Leistungsfahigkeit gesunder Versuchpersonen durch Lithiumcarbonat. Pharmakopsychiatrie Neuro-Psychopharmakologie. 13(4):175-181, 1980.

Lithium carbonate was administered during a double-blind crossover experiment lasting 8 weeks, and involving 11 healthy volunteers. In psychological tests, no deterioration in mood, performance, or memory could be shown. However, diary entries made by the Ss, refer to complaints, particularly relating to vegetative functions, more frequently under lithium medication than during the placebo period. (Journal abstract modified)

000712 Podiwinsky, F.; Mentasti, M.; Riederer, P.; Birkmayer, W. L.-Boltzmann-Inst. Klin. Neurobiol., Neurol. Abt., Vienna, Austria **/The treatment of Parkinson's disease using a combination of L-Dopa and decarboxylase inhibitors (Carbidopa, Benserazide). A clinical and biochemical comparative investigation./** Zur Behandlung des Parkinson-Syndroms mit Kombinationspraparaten von L-Dopa mit Dekarboxylasehemmern (Carbidopa, Benserazid). Eine klinisch-biochemische Vergleichsuntersuchung. Wiener Klinische Wochenschrift. 91:332-337, 1979.

The effectiveness of a combination drug of L-dopa and decarboxylase inhibitors were examined in a double-blind study. Twenty Ss with Parkinson's disease were treated with two combined preparations of L-Dopa and an aromatic amono acid decarboxlase inhibitor. Other clinical findings, that this is the best treatment for Parkinson's disease currently available, were confirmed. Both preparations contribute to optimal treatment using minimal amounts of L-Dopa. On the average, the dosage of L-Dopa can be cut by 80%. Switching preparations can prevent the decline in effectiveness often found in long-term therapy. Laboratory tests of plasma showed that both preparations were equally effective. (Journal abstract modified)

000713 Prins, David; Mandelkorn, Theodore; Cerf, F. Ann. Dept. of Speech and Hearing Sciences, University of Washington, 1320 N.E. Campus Parkway, Seattle, WA 98195 **Principal and differential effects of haloperidol and placebo treatments upon speech disfluencies in stutterers.** Journal of Speech and Hearing Research. 23(3):614-629, 1980.

The effects of haloperidol and placebo treatments upon the speech disfluencies in 14 stutterers were examined in a double-blind crossover study. Although clearly not clinically effective, haloperidol had a statistically significant effect upon reducing disfluency frequency and increasing speaking rate. For most subjects, drug related reductions in disfluency severity resulted from a decrement in whole words and phrase repetition, interjection, and revision type disfluencies rather than from fewer part word (elemental) repetitions and prolongations of sound or of silence. Neurotic personality profile correlated positively with an overall placebo effect, and there was a positive correlation between abnormal EEG and the drug effect. These findings are discussed in light of the nature of speech disfluency and stuttering and haloperidol's biochemical and behavioral actions. 28 references. (Author abstract)

000714 Quesney, L. F.; Andermann, F.; Lal, S.; Prelevic, S. Montreal Neurological Institute, 3801 University, Montreal, Quebec H3A 2B4, Canada **Transient abolition of generalized photosensitive epileptic discharge in humans by apomorphine, a dopamine-receptor agonist.** Neurology. 30(11):1169-1174, 1980.

The transient abolition of generalized photosensitive epiletpic discharge in humans by apomorphine, a dopamine receptor agonist, is reported. Visual evoked potentials were not altered by apomorphine, but in nine of 11 patients with generalized photosensitive epilepsy, apomorphine transiently blocked the epileptic photosensitivity for an average of 45 minutes. These data and previous animal studies suggest that apomorphine may inhibit dopaminergic neurotransmission by preferentially stimulating presynaptic dopamine receptors. Alternatives to a dopaminergic explanation of these effects are reviewed. 34 references. (Author abstract modified)

000715 Rapoport, Judith L. Unit on Childhood Mental Illness, National Institute of Mental Health, Bethesda, MD 20014 **The treatment for hyperactive children: recent findings and a report from clinical practice.** In: Whalen, C., Hyperactive children. New York, Academic Press, 1980. 407 p. (247-258).

Clinical techniques for assessing hyperactive children, planning the use of medication, and maintaining drug treatment are considered. The following topics are considered: diagnosis in child psychiatry, clinical interpretation of findings to school and parents, explanation to the child, the decision to start stimulant drug treatment, stimulant drug response and diagnostic formulation, and long-term management of medication. It is suggested that children must be viewed in their social and psychological settings, and that the advantages of any therapy must be weighted against present knowledge about alternative strategies. It is proposed that the preexisting causal attributions held by the child and family may be more powerful than the influence of medicating per se, and these cognitive factors should be considered in treatment decisions.

000716 Rapoport, Judith L.; Buchsbaum, Monte S.; Weingartner, Herbert. Biological Psychiatry Branch, National Institute of Mental Health, Bethesda, MD 20205 **Dextroamphetamine: cognitive and behavioral effects in normal and hyperactive boys and normal adult males.** Psychopharmacology Bulletin. 16(1):21-23, 1980.

The cognitive, behavioral, and electrophysiological responses to d-amphetamine elixir of normal children, hyperactive children, and male college age volunteers were investigated under identical experimental conditions. Motor activity was decreased on drug for both of the children's groups and for the low dose adult group; the high dose adult group had not significant group change in activity, although some individuals were rated more restless by the interviewer while on drugs. Children reported that they euphoria and activation on either dose of medication. Reaction time decreased for both groups of children while for adults on the low dose reaction time decreased significantly. The findings of a decrease of motor activity for normal adults is seen as providing further argument against the notion of a paradoxical effect of amphetamines in children compared with adults, as well as pointing up the situational specificity of amphetamine effects. 9 references.

000717 Rivera-Calimlim, L.; Griesbach, P. H.; Perlmutter, R. Dept. of Pharmacology and Toxicology, University of Rochester Medical Center, Rochester, NY 14642 **Plasma chlorpromazine concentrations in children with behavioral disorders and mental illness.** Clinical Pharmacology and Therapeutics. 26(1):114-121, 1979.

Plasma chlorpromazine (CPZ) levels were studied in children (8 to 15 years old) treated with CPZ for childhood psychosis, mental retardation, or schizophrenia. Results showed that children need larger doses of CPZ than adults to attain comparable plasma concentrations. The apparent therapeutic plasma concentration in children (40 to 80ng/ml) was lower than that reported for adults (50 to 300ng/ml). Plasma CPZ concentrations declined in these children despite maintained dosage, possibly as a result of autoinduction of CPZ metabolism. Doses of 6 to 11mg/kg (as much as 850mg/day) were tolerated without significant side-effects when administered in divided doses. 15 references. (Author abstract modified)

000718 Robertson, William C., Jr.; Clark, David B.; Markesbery, William R. Dept. of Neurology, University of Kentucky Medical Center, Lexington, KY 40536 **Review of 38 cases of subacute sclerosing panencephalitis: effect of amantadine on the natural course of the disease.** Annals of Neurology. 8(4):422-425, 1980.

The effect of amantadine on the natural course of subacute sclerosing panencephalitis (SSPE) was examined in a review of 38 cases of SSPE. Deterioration in school performance, personality changes, and seizures were common early symptoms. Initial examination frequently showed myoclonus, spasticity, and extrapyramidal dysfunction, and in two thirds of the patients, these findings were asymmetrical or focal. At last followup, 24 children had died, with a mean survival of 42 months. Most patients reached a state of severe neurological impairment with 13 months. Subsequent evidence of improvement was noted in 10 children and was sustained in four. Duration of survival appeared to be affected most by treatment with amantadine. Three patients treated with the drug were alive 97 to 137 months after onset of SSPE, and five died with a mean survival of 78

months. Five of six individuals treated with rifampin died after a mean survival of 27 months. Prolonged remissions occurred only in patients treated with amantadine. Although the number of treated individuals was small, the data suggest that amantadine may affect the natural course of SSPE. 16 references. (Author abstract modified)

000719 Rydzynski, Z.; Araszkiewicz, A.; Gozdalska, J.; Gruszczynski, W. Institute of Mental Hygiene, Military Medical Academy, Lodz, Poland **Flunitrazepam in the treatment of delirium tremens -- preliminary report.** Activitas Nervosa Superior. 21(3):161-162, 1979.

The use of therapeutic efficacy of flunitrazepam in the treatment of acute mental disturbances (delerium tremens) of 15 male patients were investigated. The patients ranged in intensity from a predelirious state to serious mental disorders with hallucinations and very strong anxiety. Two patients showed symptoms of inebriation. Drug administration resulted in almost immediate sedation and in quick improvement of the patients' general condition. In eight patients who had been already treated for delirium tremens, flunitrazepam was superior to previously used drugs (truxal, elenium) in suppression of psychomotor excitation and hallucinations with a strong hypnotic effect. No deterioration or side-effects were observed. The quick improvement of the psychic condition after disappearance of sleep disturbances seems to confirm the hypothesis relating delirium to the preservation of paradoxical sleep.

000720 Saletu, B.; Grunberger, J.; Linzmayer, L.; Stadler, R. Psychiatrische Universitatsklinik, Allgemeines Krankenhaus, Lazarettgasse 14, A-1097 Vienna, Austria **Classification and assessment of cerebral bioavailability of lopirazepam (D-12524) by quantitative EEG and psychometric analysis.** Arzneimittel-Forschung. 30(3):513-518, 1980.

The CNS efficacy and pharmacodynamic properties of lopirazepam, D-12524, were studied in a double-blind placebo controlled design with 10 normal volunteers. EEG digital computer period analysis demonstrated dose dependent changes, which are typical of the class of anxiolytics and which started in the 2nd hour, peaked in the 4th hour, and lasted after 3mg, 5mg, and 10mg up to the 4th, 6th, and 8th hour, respectively. Ten milligrams of D-12524 produced an additional augmentation of slow waves indicating sleep inducing qualities in this dosage. The equipotent dosage to 10mg prazepam seems to be 5mg. Psychometric analyses demonstrated an improvement in attention, psychomotor performance, mood, and affectivity after 3mg, and opposite changes after 10mg of D-12524. Other tests indicated a good tolerance of the drug. 25 references. (Author abstract modified)

000721 Sandler, Merton. University of London, London, England **Psychopharmacology of aggression.** New York, Raven, 1979. 235 p. $22.50.

This text on the psychopharmacology of aggression includes the following topics: the ethology of aggression; the effect of drugs; the role of biogenic amines in aggressive behavior; molecular basis of some aggressive behavior models; testosterone and aggression; human aggression and its relationship to the major central metabolites of serotonin, norepinephrine, and dopamine; phenylethylamine in human aggressive behavior; benzodiazepines and aggression; lithium therapy; amygdalotomy for aggression; and competitive and cooperative behavior.

000722 Sehested, Per; Lund, Hans Ivar; Kristensen, Ole. Klovervaenget 14C , DK-5000 Odense C, Denmark **Oral choline in cerebellar ataxia.** Acta Neurologica Scandinavica. 62(2):124-126, 1980.

In a double-blind, crossover pilot study with placebo, choline chloride, the physiologic precursor of acetylcholine, was tested in six patients with cerebellar ataxia. Despite prevous reports of dramatic improvement in a patient with idiopathic cerebellar degencration treated with choline chloride, no significant treatment effects were found. Three patients preferred choline chloride, two preferred placebo, and one was indifferent. The need for a large trial of the effects of choline chloride on cerebellar ataxia is cited. 11 references. (Author abstract modified)

000723 Skoglund, R. R. USN Pediatric Service, Naval Regional Medical Center, San Diego, CA 92134 **Reversible alexia, mitochondrial myopathy, and lactic acidemia.** Neurology. 29(5):717-720, 1979.

A case of poliodystrophy, mitochondrial myopathy, lactate acidemia, and steroid sensitive alexia is described. When the 11-year-old boy was treated with prednisone, his strength and reading skill improved, symptoms resolved, and muscle enzymes returned to normal. Three attempts to reduce steroids resulted in accentuated symptoms, seizures, weakness, regression of reading skills, and elevation of serum enzymes. 12 references. (Author abstract modified)

000724 Strnad, P. Research Institute of Traumatology, Brno, Czechoslovakia **Influencing brain concussion by nootropil.** In: Benesova, O., 21. Annual Czechoslovak Psychopharmacological Meeting. Jesenik Spa, Czechoslovakia, 1979. 140 p. (p. 112-116).

The effects of piracetam on closed brain trauma (concussion) were examined in 20 experimentals administered three 400 mg doses of piracetam per day and 17 control patients receiving conventional treatment. Results indicated a higher incidence of normal EEG recordings on days 3 and 7 of treatment in experimentals relative to controls; vigilance fluctuations disappeared in EEGs of experimentals, but diffuse theta waves were not significantly affected. Piracetam administration was associated with a reduction of subjective complaints of headache, weakness, and drowsiness, but with increased complaints of inner tremor. Finally, a trend for a shortening of recovery time in experimentals relative to controls was also found. Because of the small sample size, further research will be needed to further clarify the utility of piracetam in the treatment of brain concussion. 4 references.

000725 Stunkard, Albert J.; Craighead, Linda Wilcoxon; O'Brien, Richard. 205 Piersol Building, Hospital of the University of Pennsylvania, Philadelphia, PA 19104 **Controlled trial of behaviour therapy, pharmacotherapy, and their combination in the treatment of obesity.** Lancet. No. 8203:1045-1047, 1980.

The efficacy of behavior therapy, pharmacotherapy, and a combination of behavior therapy/pharmacotherapy in the treatment of obesity was examined. Subjects were 120 obese women and 14 obese men. At the end of 6 months of treatment patients who received the appetite suppressant fenfluramine either alone or in combination with behavior therapy lost significantly more weight than those who received behavior therapy alone. A 1 year followup showed a striking reversal of these effects with pharmacotherapy patients regaining most of the weight they lost in therapy. Addition of pharmacotherapy apparently compromised the long-term effects of behavior therapy. It is concluded that better maintenance of weight loss and lower costs favor behavior therapy over pharmacotherapy for the treatment of obesity. 8 references. (Author abstract modified)

000726 Tamminga, Carol A.; Smith, Robert C.; Davis, John M. Dept. of Psychiatry, University of Chicago, Chicago, IL 60637 **The effects of cholinergic drugs on the involuntary movements of tardive dyskinesia.** In: Fann, W., Tardive dyskinesia. New York, SP Medical and Scientific Books, 1980. 531 p. (p. 411-418).

Data from double-blind, placebo controlled trials of three cholinomimetic agents are presented to demonstrate the effects of cholingeric drugs on the involuntary movements of tardive dyskinesia (TD). These data indicate the physostigmine reduces symptoms of TD in an action suspected of going beyond its sedating effect. The preliminary findings with choline further support the position that cholinergic agents are therapeutically effective in TD, although severe depression in two patients warrants continued observation. Deanol administration had no general treatment effects, although it may be effective in treating isolated patients. These findings demonstrate the role of cholinergic transmission in diminishing the choreiform movements of TD and suggest that normal regulation of extrapyramidal function depends upon a sensitive balance among the various striatal neurotransmitters. 25 references.

000727 Thorpy, Michael J. Neurology Dept., Montefiore Hospital and Medical Center, 111 East 210 St., Bronx, NY 10467 **Rectal valproate syrup and status epilepticus.** Neurology. 30(10):1113-1114, 1980.

A report of a status epilepticus patient who did not respond to commonly used anticonvulsants but whose seizures were completely controlled by sodium valproate syrup given rectally is presented. It is noted that patients with continuous seizure activity, despite adequate blood levels of phenytoin and phenobarbital, may die of exhaustion and respiratory failure. Diazepam is an effective agent in treating status epilepticus, but assisted respiration may be necessary because of the respiratory depressant action, and even massive doses may be ineffective for seizure control. On the two occasions when sodium valproate was given, serum phenytoin levels fell rapidly, as reported by others. Despite the fall in phenytoin levels, the seizures became less frequent, presumably because of the valproate effect. In patients with status epilepticus, use of sodium valproate syrup rectally may prevent the need for assisted respiration and may more rapidly control the seizure. 6 references. (Author abstract modified)

000728 Troupin, A. S.; Friel, P.; Wilensky, A. J.; Moretti-Ojemann, L.; Levy, R. H.; Feigl, P. Epilepsy Center of Philadelphia, Dept. of Neurology, School of Medicine, University of Pennsylvania, Philadelphia, PA **Evaluation of clorazepate (Tranxene) as an anticonvulsant -- a pilot study.** Neurology. 29(4):458-466, 1979.

Clorazepate and phenobarbital were compared as secondary anticonvulsants in eight ambulatory outpatients. Seizure control did not differ with the two treatments. Phenobarbital induced drowsiness, but no side-effects were associated with clorazepate. Clorazepate dose in the 0.56mg/kg range gave desmethyldiazepam levels in the 1.0mcg/ml range. 31 references. (Author abstract modified)

000729 Vyborova, L.; Balastikova, B.; Drtilkova, I.; Nahunek, K. Psychiatric Clinic UJEP, Jihlavska 102, Brno-Bohunice, Czechoslovakia **Clonazepam and dithiaden in hyperkinetic children.** Activitas Nervosa Superior. 21(3):155-156, 1979.

A double-blind, crossover study of the effects of clonazepam (a neuroleptic) and dithiaden (an antihistamine) in the treatment of 24 hyperkinetic children is described. In addition to hyperactivity, most of the children were characterized by excessive aggressivity. Behavior was assessed weekly with a modification of Cerny's scale for children. Psychological tests administered include: reaction time to optical and acoustical stimuli, tapping, vigilance, and memory tests. Mean global pathology was reduced earlier and more distinctly following dithiaden administration. The primary effects of dithiaden were on aggression, with less effect on attention and motor restlessness.

000730 Waggoner, Raymond, Jr. Emma Pendelton Bradley Hospital, Riverside, RI 02915 **Minimal brain dysfunction -- hyperkinetic syndrome.** Journal of Continuing Education in Psychiatry. 40(5):13-24, 1979.

An overview of the behavioral syndrome variously termed hyperkinesis, hyperactivity, organic brain syndrome, specific learning disability, minimal brain dysfunction, and minimal brain damage, is presented. While considerable controversy and confusion exists about these terms, they all seem to refer to the same group of children. Differential diagnosis of this syndrome is discussed, emphasizing the importance of a carefully taken history which reveals all aspects of the child's development. Symptoms such as hyperactivity, distractibility, impulsiveness, unpredictability, emotional lability/explosive irritability, and dysfunctions in fine or gross motor coordination are delineated. A range of psychological tests helpful in diagnosis is provided. Active involvement of the child and his parents in all phases of treatment is recommended; treatment should be comprehensive and deal with the educational, psychological/emotional, and developmental aspects of the problem, including secondary effects and their prevention. Long-term followup is very important. Guidelines for pharmacotherapeutic treatment with dexedrine, benzedrine, methylphenidate, and imipramine are provided. 77 references. (Author abstract modified)

000731 Washton, Arnold M.; Resnick, Richard B. Dept. of Psychiatry, New York Medical College, 5 East 102nd Street, New York, NY 10029 **Clonidine for opiate detoxification: outpatient clinical trials.** American Journal of Psychiatry. 137(9):1121-1122, 1980.

The efficacy of administering clonidine for opiate detoxification was assessed in 70 opiate dependent outpatients who requested detoxification, who had been addicted to opiates for at least 2 years, and who showed no evidence of serious medical or psychiatric illness. Detoxification successful rates, defined by the number of patients who were able to remain opiate free on clonidine for the 10 days necessary to initiate naltrexone treatment are presented. The data show superiority of the abrupt withdrawal procedure as compared with the gradual procedure in helping patients achieve an opiate free state. The data also indiate that patients who switched abruptly from methadone to clonidine were more successful than those who switched abruptly from heroin to clonidine. The study confirms clonidine's antiwithdrawal effects and demonstrates that outpatients can be detoxified with clonidine in a safe, acceptable, and effective manner. 5 references.

000732 Whitehouse, Dennis; Shah, Usha; Palmer, Frederick B. 707 North Broadway, Baltimore, MD 21205 **Comparison of sustained-release and standard methylphenidate in the treatment of minimal brain dysfunction.** Journal of Clinical Psychiatry. 41(8):282-285, 1980.

The effects of the standard form of methylphenidate (10mg given twice daily) were compared to those of a sustained release form of the drug (20mg given once daily) in outpatient children with minimal brain dysfunction. Data were obtained over a 2 week period with 30 Ss. Psychometric tests were completed by the children, and physicians, teachers, and parents completed questionnaires on drug effects. No significant changes which were clinically favorable for one group over the other occurred, nor were there significant improvements over pretreatment measurements for either group. Adverse reactions (headache, hyperactivity, restlessness) were reported by five patients receiving the sustained release and two receiving the standard methylphenidate. 3 references. (Author abstract modified)

000733 Wingert, Terence D.; Hershman, Jerome M. Hershman: Endocrinology Section, Veterans Administration Wadsworth Hospital Center, Wilshire and Sawtelle Blvds., Los Angeles, CA 90073 **Sinemet and thyroid function in Parkinson disease.** Neurology. 29(7):1073-1074, 1979.

The effects of chronic carbidopa/levodopa therapy on thyroid function in patients with Parkinson's disease were examined. All patients appeared to be euthyroid. A small but significant reduction in serum thyrotropin levels was observed after drug treatment. 5 references. (Author abstract modified)

000734 Yamamoto, Joe; Fung, Desmond; Lo, Samuel; Reece, Sachiko. University of California Neuropsychiatric Institute, Los Angeles, CA **Psychopharmacology for Asian Americans and Pacific Islanders.** Psychopharmacology Bulletin. 15(4):29-31, 1979.

A presentation discussing the psychopharmacological treatment of Asian-Americans and Pacific Islanders as contrasted with Caucasian-Americans, which was delivered at the Seventeenth Annual Meeting of the American College of Neuropsychopharmacology, held in Maui, Hawaii, December 11 to 13, 1978, is summarized. Although the experience is quite limited, interesting trends are noted which suggest that Asian-American patients require less medication than other Americans. Japanese manic depressive patients were found to require lower levels of lithium to reach appropriate clinical results than was recommended in textbooks. A study of Chinese and Japanese outpatients in Los Angeles were also found to require low dosages of neuroleptics and antidepressants when compared to the usual amounts prescribed for Caucasian-Americans. 4 references.

000735 Zbytovsky, J.; Zapletalek, M. Psychiatric Clinic, Charles University, 500 36 Hradec Kralove, Czechoslovakia **Cyproteronacetate in the therapy of sexual deviations.** Activitas Nervosa Superior. 21(3):162, 1979.

The therapeutic efficacy of cyproteronacetate in the therapy of sexual deviations was studied. Cyproteronacetate was tested in 10 male outpatients with diagnoses of exhibitionism (8), ephebophilic homosexuality (1), and voyeurism (1), who had not undergone hormonal treatment. Phallographic examination showed a good reactivity in all patients and as early as 1 month into treatment, the expected flattening of the PPG curve in six of seven patients, and especially an increase in the latency of the response to an erotic stimulus, were observed. In all patients, an inhibition in number and motility of sperm was observed. Patients reported a decrease in sexual appetency and activity, and that they felt quiet and equanimous during treatment.

12 PSYCHOTOMIMETIC EVALUATION STUDIES

000736 Bolter, Arthur. 1300 Bancroft, San Leandro, CA 94577 **Issues for inpatient treatment of chronic PCP abuse.** Journal of Psychedelic Drugs. 12(3-4):287-288, 1980.

Issues in chronic phencyclidine (PCP) abuse are addressed. Based on observations of PCP abusers, it is suggested that they have characteristics similar to those of the learning disabled child: emotional lability, social incompetence, poor social judgment, overt impulsiveness, poor concentration and attention span, poor interpersonal relationships, and social maladjustment. While these characteristics may be short-lived and reversible, PCP abusers must be treated in much the same way as the educationally handicapped child. In treatment it is suggested that: clear ground rules be established and enforced, decision-making be kept to a minimum, stressful situations be avoided, realistic consequences be set for both positive and negative behaviors, and tasks with a regular routine be established. Less use of confrontation techniques is also recommended.

000737 Domino, Edward F. Reprint Secretary, Lafayette Clinic, 951 East Lafayette, Detroit, MI 48207 **History and pharmacology of PCP and PCP-related analogs.** Journal of Psychedelic Drugs. 12(3-4):223-227, 1980.

The history and pharmacology of phencyclidine (PCP) and its related analogs are reviewed. PCP and its derivatives were the result of attempts by Maddox in 1956 to elaborate some new stable immino or ketone compounds with novel chemical structures which, it was hoped, would have therapeutic merit. Early animal research indicated that PCP and some derivatives produced a cataleptoid anesthetic effect; however, preliminary trials in humans indicated emergence delirium in about 30% of patients. Since then PCP has become so controlled that no drug company will manufacture it. PCP acts on the CNS, and its pharmacologic effects are complex. Moderate doses are analgesic and anesthetic; in large doses PCP produces convulsions. PCP belongs to a distinct class of drugs with common stimulus generalization properties. In addition to producing a flight/fight reaction, PCP has complex neurochemical actions which include changes in a large variety of neurotransmitters including epinephrine, norepinephrine, dopamine, serotonin, and acetylcholine. 5 references.

000738 Dray, A.; Fox, P. C.; Hilmy, M.; Somjen, G. G. Somjen: Dept. of Physiology Duke University Medical Center, Durham, NC 27710 **The effects of LSD and some analogues on the responses of single cortical neurons of the cat to optical stimulation.** Brain Research. 200(1):105-121, 1980.

The effects of lysergic acid diethylamide (LSD) and its analogues, 2-bromo-LSD (BOL) and methysergide, on responses to photic stimulation of single neurons in the striate cortex of the paralyzed, anesthetized cat were investigated. Systemic LSD produced: 1) enhancement or depression of evoked activity, with low and high doses, respectively; 2) changes in directional selectivity; and 3) changes in unstimulated background discharges. The effectiveness of the drug was reduced by repeated administration. The effects of BOL and methysergide were similar to those of LSD, but considerably less potent. It is concluded that these drugs influence visually evoked neuronal responses mainly by acting directly on cortical cells or synapses; and that the interference with visual cortical function could account for the distortion of visual perception caused by lysergic acid analogues; but that the hallucinogenic and psychotomimetic actions of LSD probably require additional subcortical effects. 72 references. (Author abstract modified)

000739 Erard, Robert; Luisada, Paul V.; Peele, Roger. Luisada: 2616 Sherwood Hall Lane, Alexandria, VA 22306 **The PCP psychosis: prolonged intoxication or drug-precipitated functional illness?** Journal of Psychedelic Drugs. 12(3-4):235-251, 1980.

Results of a study of phencyclidine (PCP) psychosis are presented. Following a review of previous PCP research, selected results of a study of 46 Black patients diagnosed as suffering PCP psychosis are presented and compared with data for psychotic and schizophrenic patients. While conclusions must be tenative, the paucity of notable differences between PCP psychotics and schizophrenics was striking. If PCP psychosis and acute schizophrenic episode were two fundamentally discrete syndromes, more systematic differences in demography, premorbid status, hospital course, symptomatology, neurological and physiological signs, and outcomes could probably be expected. It is hypothesized that PCP psychotics may represent individuals who are psychologically, but not constitutionally, vulnerable to schizophrenia in whom PCP replicates the absent constitutional factor, thus precipitating a temporary schizophrenic status. 35 references.

000740 Nelson, E. Don; Sigell, Leonard T.; Parker, Roger E.; Hestness, Janiece. Drug and Poison Information Center, University of Cincinnati, Room 7701-Bridge, 231 Bethesda Avenue, Cincinnati, OH 45267 **Epidemiology of PCP abuse: the Midwest perspective.** Journal of Psychedelic Drugs. 12(3-4):217-222, 1980.

Data for phencyclidine (PCP) abuse, morbidity, and mortality are discussed. Following a review of epidemiological research conducted in the Midwest between 1975 and 1979 indicating relatively small increases in prevalence with a concentration among adolescent users, results of a 1979 survey of 17 Ohio drug abuse service programs are presented. Results indicate about equal numbers of chronic and experimental users seen by these programs; 52.5% of users were in the 11 to 19-year-old age range, the remainder were adults. Violence associated with PCP user was reported by 70% of the agencies, criminal behavior by 58%. Of users, 94% were polydrug users, and 73% used PCP in a group setting. The most common psychiatric condition precipitated by PCP use was a paranoid schizophreniform reaction. Other conditions included disorientation, catatonia, and disinhibition; 29% of the agencies had not seen any psychiatric problems. Eight cases of PCP reported deaths. Overall, agencies ranked PCP fourth as a drug problem. 4 references.

000741 Newmeyer, John A. Haight-Ashbury Free Medical Clinic, 409 Clayton Street, San Francisco, CA 94117 **The epidemiology of PCP use in the late 1970s.** Journal of Psychedelic Drugs. 12(3-4):211-215, 1980.

Epidemiological data on phencyclidine (PCP) use in the late 1970s are presented. Three recent population surveys have shown an increasing prevalence of PCP use, particularly among younger users (12 to 17 years old) over the past 3 years. Early data for 1979, suggest that while PCP use is still increasing, increases are smaller than in previous years. Use continues to be concentrated among non-White males in the 15 to 25 year old age group, and 10% to 15% of this age group have tried PCP. While the dangers of PCP use have been well publicized, ethographic data reveal that in the vast majority of users PCP leads to neither crisis nor to a Four factors suggest that 1979 may be the high water mark in the prevalence of PCP use: it is among the most expensive of recreational drugs; experimenters seem disinclined to progress to regular use; few inroads in use have been made in the over 30 population; and American adolescents appear to becomining more career and competition conscious. 1 reference.

000742 Ott, Jonathan; Neely, Patricia. Route 2, Box 147-B, Burton, WA 98013 **Entheogenic (hallucinogenic) effects of methylergonovine.** Journal of Psychedelic Drugs. 12(2):165-166, 1980.

The hallucinogenic effects of methylergonovine (2mg peroral) were examined in a self-administration study (n=2). Beginning effects were noted 13 min postingestion; early effects include a mild sense of pressure in the head, flashes in the periphery of the visual field, slight vertigo, mild muscular cramping, inner excitement, lassitude, and restlessness. Strongest effects were noted for a 3 hr period, beginning approximately 2 hrs postingestation and involving excited imagination, visualization from external cues, and somatic and subjective effects reminiscent of experience with lysergic acid diethylamide, but milder and more superficial. Drug effects were largely gone at 10 hr postingestion. Experiences with this drug similar, but subjectively five times more potent, than those with ergonovine. 8 references.

000743 Petersen, Richard C. Division of Research, National Institute on Drug Abuse, 5600 Fishers Lane, Rockville, MD 20857 **Phencyclidine: a NIDA perspective.** Journal of Psychedelic Drugs. 12(3-4):205-209, 1980.

Issues in phencyclidine (PCP) research are examined from a National Institute of Drug Abuse (NIDA) perspective. Findings related to trends in PCP use (particularly among adolescents) and to subjective and qualitative aspects of use are discussed in a review of NIDA sponsored epidemiological and ethnographic research. Animal self-administration research has also been conducted to examine the pharmacological mechanisms of abuse and dependence. Major areas for future research include: interactive drug effects, demographic and personality characteristics of users, development of better animal models for screening PCP-like compounds for their abuse liability, and effective prevention, including the development of early warning systems to detect changing trends in drug abuse patterns. 13 references.

000744 Schnoll, Sidney H. Institute of Psychiatry, Drug Dependence Dept., Second Floor, 320 East Huron, Chicago, IL 60611 **Street PCP scene: issues on synthesis and contamination.** Journal of Psychedelic Drugs. 12(3-4):229-233, 1980.

Research methodological problems associated with analysis of street drug data are examined. With phencyclidine (PCP), as with other illicitly made and sold street drugs, a number of major problems exist for the researcher: the user is never certain of what drug or dose is being taken or if and what contaminants are being taken; the method of administration may increase the toxicity; the substance may exacerbate existing health problems; and health care providers, unaware of the drug or drugs used, may initiate improper treatment. Sample studies suggest that many drugs sold as PCP actually contained, in addition, combinations of other drugs and comtaminants; further, as use of PCP declined, PCP was increasingly found as a contaminant in other street drugs. It is suggested that much research will be needed to resolve the above methodological problems; until such problems are resolved few conclusions about PCP street drug use can be drawn. 22 references.

000745 Smith, David E.; Smith, Nyle; Buxton, Millicent E.; Moser, Charles. Haight-Ashbury Free Medical Clinic, 409 Clayton Street, San Francisco, CA 94117 **PCP and sexual dysfunction.** Journal of Psychedelic Drugs. 12(3-4):269-273, 1980.

Sexual dysfunction is examined within the context of a study of phencyclidine (PCP) users. Following a discussion of the pharmacology of PCP as it relates to sexual functioning, data from a study of PCP and other drug users presenting for treatment and of PCP users not presenting for treatment are examined. Use of PCP in the sexual context appeared to be fairly widespread, especially among male homosexuals. While it has sex enhancing effects at low dosages, higher dosage and chronic use were often associated with erectile and even ejaculatory dysfunction. A higher incidence of both adverse drug reactions and sexual dysfunction was found when high dose chronic users had underlying psychopathology and a history of polydrug abuse. In addition, it appeared that many of acute adverse reactions associated with PCP use were influenced by the lack of knowledge the individual had about the drug. Three illustrative cases are also provided. 8 references.

000746 Smith, David E.; Wesson, Donald R. Haight-Ashbury Free Medical Clinic, 409 Clayton Street, San Francisco, CA 94117 **PCP abuse: diagnostic and psychopharmacological treatment approaches.** Journal of Psychedelic Drugs. 12(3-4):293-299, 1980.

A typology of adverse phencyclidine (PCP) reactions and appropriate psychopharmacological treatment approaches for each type are presented. Four adverse reactions may be observed in PCP abusers: acute PCP toxicity, which may involve combativeness and catatonia and convulsions and coma; PCP toxic psychosis, usually seen after the acute toxicity phase has passed and

characterized by impaired judgment, paranoid delusions, flattened affect, and visual and auditory hallucinations; PCP precipitated psychotix episode, generally seen in patients with psychotic or prepsychotic personality, characteristically, episodes are of a schizoaffective type with paranoid features; and PCP-induced depression which may follow the earlier types, lasting from one day to several months. Diazepam, haloperidol, haloperidol or chlorpromazine, and tricyclic antidepressants are recommended in treatment of the four types, respectively. Irrational violence in the PCP abuser is also discussed; and case materials are used to illustrate each type of reaction and its treatment. 22 references.

13 MECHANISM OF ACTION: PHYSIOLOGICAL, BIOCHEMICAL AND PHARMACOLOGICAL

000747 Abel, J. G.; Sellers, E. M.; Naranjo, C. A.; Shaw, J.; Kadar, D.; Romach, M. K. Sellers: Addiction Research Foundation, 33 Russell St., Toronto, Ontario M5S 2S1, Canada **Inter- and intrasubject variation in diazepam free fraction.** Clinical Pharmacology and Therapeutics. 26(2):247-255, 1979.

The variation in diazepam free fraction was studied in fasted and nonfasted normal Ss, uremic patients, and twins. Results revealed twofold differences in free fraction among individuals and a 15% intraindividual change. These differences may alter the time course of total and free plasma drug concentrations after single and multiple dosing schedules. Since within pair variances were not greater in dizygotic twins than in monozygotic twins, it appears that environmental factors have a greater influence than genetic factors on diazepam binding. 40 references. (Author abstract modified)

000748 Abrams, A. A.; Braff, D. L. Braff: Dept. of Psychiatry, M-003 School of Medicine, University of California, La Jolla, CA 92093 **Lithium induced cogwheel rigidity: treatment with amantadine.** Pharmakopsychiatrie Neuro-Psychopharmakologie. 13(4):240-242, 1980.

A case of a young woman who developed extrapyramidal side-effects (EPS) associated with lithium treatment is reported. The symptoms of cogwheel rigidity responded minimally to benztropine and diphenhydramine and markedly to amantadine. Although the time course of medication treatment and EPS strongly suggest lithium as a major or sole etiologic agent, it is possible that a subtle interaction of residual low doses of antipsychotics and lithium carbonate may play a role. 10 references.

000749 Angst, J.; Muller-Oerlinghausen, B. Psychiatrische Universitatsklinik, Forschungsdirektion, Postfach 68, CH-8029 Zurich 8, Switzerland **/Methodological remarks on long-term lithium treatment./** Methodologische Anmerkungen zur Langzeitbehandlung mit Lithium. Pharmakopsychiatrie Neuro-Psychopharmakologie. 13(4):152-155, 1980.

The process of long-term lithium use in the treatment of depressive illness is discussed. Until now no short-term study with a control group for comparison has been documented. The psychiatric desired results like the patients functioning as his own control, the connection between the spontaneous development of the illness and lithium indication, and the definitions and documentation of treatment results are discussed. Side-effects and the difficulty of finding healthy control subjects are pointed out. Research into the spontaneous development of affective disorders obtained a special theoretical and practical meaning with the introduction of lithium. (Author abstract modified)

000750 Arora, Ramesh C.; Meltzer, Herbert Y. Illinois State Psychiatric Institute, 1601 W. Taylor St., Chicago, IL 60612 **In vitro effect of phencyclidine and other psychomotor stimulants on serotonin uptake in human platelets.** Life Sciences. 27(17):1607-1613, 1980.

Phencyclidine, ketamine, and fluoxetine were found to inhibit serotonin (5-HT) uptake in a noncompetitive manner in human blood platelets whereas d-amphetamine and l-amphetamine produced a competitive inhibition of 5-HT uptake. Phencyclidine was one hundredth as potent as fluoxetine, but ten times more potent that ketamine and d-amphetamine, and three times more potent than l-amphetamine in inhibition of 5-HT uptake by human blood platelets. The possibility that inhibition of 5HT may contribute to some of the proposed serotonergic effects of psychomotor stimulants is discussed. 35 references. (Author abstract modified)

000751 Aschoff, J. C.; Becker, W.; Jurgens, R. Neurologische Klinik der Universitat Ulm, Dietenbronn, D-7959 Schwendi, Germany **/A computer oculographic and EEG double-blind study including well-being for determining changed vigilance under therapy with Tiapride./** Eine computerokulographische und elektroenzephalographische Doppelblindstudie unter Einbeziehung der Befindlichkeit zur Erfassung von Vigilanzanderungen unter einer Tiaprid-Medikation. Arzneimittel-Forschung. 30(3):509-512, 1980.

The mechanism of action of the drug Tiapride on the vigilance of 16 normal Ss was compared with that of diazepam and a placebo. Using a double-blind design, a minor reduction in vigilance was observed in the EOG and EEG following administration of 100mg three times daily. It is suggested that this effect would not be expected to impair general performance of behavior in traffic. No changes in self-assessment (existential orientation scale, list of complaints) occurred for male Ss receiving tiapride, while female Ss exhibited a slight tendency toward feeling low, though their mood remained above the limits of depression. 10 references. (Journal abstract modified)

000752 Asnis, Gregory M.; Nathan, R. Swami; Halbreich, Uriel; Halpern, Freida S.; Sachar, Edward J. College of Physicians and Surgeons of Columbia University, 722 W. 168th, New York, NY 10032 **Prolactin changes in major depressive disorders.** American Journal of Psychiatry. 137(9):1117-1118, 1980.

Basal prolactin levels were assessed in depressed patients during illness and after recovery. Prolactin levels were significantly greater at each baseline point after patients had recovered than during their illness. Since all prolactin levels, before and after recovery, were in the normal range, and since all but three patients were receiving antidepressants at the time of recovery, the results can be interpreted in two ways: 1) as a modest but significant reduction in prolactin secretion, associated with depressive illness, or 2) as a modest but significant increase in prolactin secretion associated with antidepressant therapy. Further studies are being conducted of recovered patients after antidepressant withdrawal or of patients before and after electroconvulsive therapy induced remission to clarify the issue. 7 references.

000753 Banduhn, N.; Obe, G.; Muller-Oerlinghausen, B. Obe: Institut fur Genetik, Freie Universitat Berlin, Arnimallee 5-7, D-1000 Berlin 33, West Germany **Is lithium mutagenic in man?** Pharmakopsychiatrie Neuro-Psychopharmakologie. 13(4):218-227, 1980.

Peripheral blood lymphocytes of 77 patients under lithium therapy were analyzed for structural chromosomal aberrations. As compared to controls not treated with lithium, no elevation of the frequencies of chromosomal aberrations was found in the patients. Comparable investigations may lead to erroneous conclusions if the higher X-ray load of psychiatric patients is not considered. 50 references. (Journal abstract modified)

000754 Bertilsson, Leif; Eichelbaum, Michel; Mellstrom, Britt; Sawe, Juliette; Schulz, Hans-Ulrich; Sjoqvist, Folke. Dept. of Clinical Pharmacology, Karolinska Institutet, Huddinge Hospital, S-141 86 Huddinge, Sweden **Nortriptyline and antipyrine clearance in relation to debrisoquine hydroxylation in man.** Life Sciences. 27(18):1673-1677, 1980.

The relationship between nortriptyline and antipyrine clearance and debrisoquine hydroxylation was studied in eight healthy volunteers with a broad range in their ability to hydroxylate debrisoquine, a metabolic reaction which is under polymorphic genetic control. Following a single oral dose of nortriptyline and antipyrine, there was a close correlation between Ss' ability to hydroxylate debrisoquine and nortriptyline plasma clearance. This indicates that these two benzylic hydroxylations are controlled by similar if not identical genetic factors. In contrast to nortriptyline, the clearance of antipyrine (assessed in saliva) was not positively related to the ability to hydroxylate debrisoquine. 24 references. (Author abstract modified)

000755 Bowdle, T. Andrew; Patel, Indravadan H.; Levy, Rene H.; Wilensky, Alan J. Levy: School of Pharmacy, BG-20, Dept. of Pharmaceutics, University of Washington School of Pharmacy, Seattle, WA 98195 **Valproic acid dosage and plasma protein binding and clearance.** Clinical Pharmacology and Therapeutics. 28(4):486-492, 1980.

Valproic acid clearance was determined in six normal Ss during single dose (250mg) and multiple dose (500, 1000, and 1500mg/day) experiments. Clearance declined 20% from 8.33 to 6.67ml/hour/kg between the single dose and 500mg/day steps. Clearance did not change between the 500 and 1000mg/day steps, despite a 44% increase in mean free fraction. Clearance increased from 6.76 to 8.20ml/hour/kg in 4 Ss who completed the step from 1000 to 1500mg/day. The apparent dose related decline in intrinsic clearance suggests autoinhibition or saturation of metabolism. 26 references. (Author abstract modified)

000756 Bruni, J.; Wilder, B. J.; Willmore, L. J.; Barbour, B. Wilder: Neurology Service (127), Veterans Administration Medical Center, Gainesville, FL 32602 **Valproic acid and plasma levels of phenytoin.** Neurology. 29(6):904-905, 1979.

The interaction of valproic acid and phenytoin was studied in eight patients treated with a constant dose of phenytoin for 1 year. Valproic acid initially decreased total plasma phenytoin levels in these patients, but this interaction was transient. At the end of the year, plasma phenytoin levels were decreased in only one patient on the two drug regimen. 13 references. (Author abstract modified)

000757 Corona, G. L.; Pinelli, P.; Zerbi, F.; Fenoglio, L.; Santagostino, G.; Frattini, P. Cucchi, M. L. University Dept. of Pharmacology, School of Pharmacy, Pavia, Italy **Amitriptyline, nortriptyline plasma levels and clinical response in women with affective disorders.** Pharmakopsychiatrie Neuro-Psychopharmakologie. 13(3):102-110, 1980.

The relationship between plasma levels of amitriptyline and its metabolite nortriptyline, as well as their side-effects and clinical response, was studied in 102 depressed female inpatients treated with different doses of amitriptyline. Significant positive correlations were found for dosage of 50mg and 100mg between amitriptyline concentration and the Hamilton Depression Rating Scale (HDRS) amelioration scores, as well as between HDRS final values and side-effects. Best therapeutic responses yielded at a dosage of 50mg for depressive neurosis and involutional melancholia; while in treatment of manic-depressive illness, comparable results occurred at a 150mg dosage. In depressive neurosis and involutional melancholia, the upper plasma concentration limits for the therapeutic effect of nortriptyline were identified. The lower plasma concentration limits of amitriptyline and nortriptyline are also pointed out. 20 references. (Author abstract)

000758 Deberdt, R.; Elens, P.; Berghmans, W.; Heykants, J.; Woestenborghs, R.; Driesens, F.; Reyntjens, A.; Van Wijngaarden, I. Psychiatric Hospital **Intramuscular haloperidol decanoate for neuroleptic maintenance therapy: efficacy, dosage schedule and plasma levels: An open multicenter study** Acta Psychiatrica Scandanavica. 62(4):356-363, 1980.

Efficacy, dosage schedule, and plasma levels were evaluated in 38 hospitalized chronic psychotic patients who were injected every 4 weeks with haloperidol decanoate using different dosage schedules calculated from the previously prescribed daily dose of haloperidol multiplied by a factor of 30, 20, or 10. The 20 fold schedule appeared to be adequate in most of the patients. No increase of extrapyramidal or other side-effects was reported in any of the patients. Antiparkinson medication could be omitted in 37 patients without problems. Plasma levels of haloperidol reaching a steady state after the second injection of haloperidol decanoate were about two times higher than during the previous oral treatment with haloperidol. No accumulation was observed. It is concluded that haloperidol injected every 4 weeks proved to be as safe and therapeutically reliable as orally administered haloperidol. 9 references. (Author abstract modified)

000759 Deom, A.; Aeschlimann, J. M.; Aellig, A. Central Laboratory for Clinical Chemistry, Hopital Cantonal Universitaire, CH-1211 Geneva 4, Switzerland **Conversion scales for commonly requested serum concentrations of drugs and other substances of therapeutic and toxicological importance, and of hormones.** Lancet. 1(8180):1241-1244, 1980.

Conversion scales are presented for serum concentrations of drugs, metals, and hormones. The scale converts to and from metric and molar Systeme International d'Unites units. Among the drugs represented on the conversion scales are: amitriptyline, carbamazepine, clonazepam, diazepam, lithium, morphine, nortriptyline, phenobarbitone, and phenytoin. 2 references.

000760 Driessen, O.; Hoppener, R. J.; van der Velde, E. A. Dept. of Pharmacology, Sylvius Laboratories, Wassenaarseweg 72, 2333 AL Leyden, The Netherlands **Practical and theoretical aspects of phenytoin administration. I. relationship between dose and plasma concentration.** European Neurology. 19(6):353-365, 1980.

The dose/plasma concentration relationship of phenytoin was studied in 28 patients by varying the dose of phenytoin and observing the effect on the plasma concentration after an equilibration period of 4 weeks. Plasma concentrations were determined by two laboratories independently. Comedication (only phenobarbital) remained constant during the period of investigation. After nonconsecutive 4 week equilibration periods, equal doses could yield substantially different plasma concentrations. It appears that an equilibration period of at least 4 weeks must be observed between a dose decrement in the high dose range and a check of the resulting steady-state plasma concentration. The slow decrement of phenytoin plasma concentration after decreasing the dose cannot be explained by the Michaelis/Menten concept. 28 references. (Author abstract modified)

000761 Filip, V.; Marek, J.; Sramkova, J.; Fliegerova, O.; Krulik, R.; Posmurova, M. Psychiatric Research Unit, Medical School, Charles University, Ke Karlovu 11, 128 21 Prague 2, Czechoslovakia **Plasma chlorpromazine-serum prolactin relationship in a single-dose experiment.** Activitas Nervosa Superior. 21(3):131-133, 1979.

The relationship between plasma chlorpromazine and serum prolactin following single doses of chlorpromazine was investigated, to evaluate previous attempts to demonstrate a dopamine receptor supersensitivity in schizophrenia via prolactin stimulation tests with chlorpromazine. Chlorpromazine was administered to three healthy volunteers at three dosages during three separate experimental sessions. Results indicate that serum prolactin response to a single chlorpromazine dose reaches its maximum at extremely low plasma chlorpromazine levels. Thus, the usual testing dose of 50mg chlorpromazine i.m. operates in the range of maximum prolactin response, regardless of the interindividual differences in plasma chlorpromazine level.

000762 Fleitman, J. S.; Bruni, J.; Perrin, J. H.; Wilder, B. J. Bruni: Suite 318, E. K. Jones Building, Wellesley Hospital, 160 Wellesley St. East, Toronto, Ontario, Canada M4Y 1J3 **Albumin-binding interactions of sodium valproate.** Journal of Clinical Pharmacology. 20(8-9):514-517, 1980.

The effects of salicylate, phenylbutazone, warfarin, and carbamazepine on the protein binding of valproate were studied in vitro by the equilibrium dialysis method. Salicylate and phenylbutazone displaced valproate from its binding sites on human serum albumin, but warfarin and carbamazepine did not. Implications of these findings for therapeutic use of antiepileptic drugs are discussed. 12 references. (Author abstract modified)

000763 Friedman, Jeannette; McCallum, Peter; Meares, Russell. Dept. of Psychiatry, University of Melbourne, Austin Hospital, Heidelberg, Victoria 3084, Australia **Stimulus intensity control in depression: a study of the comparative effect of doxepin and amitriptyline on cortical evoked potentials.** Australian and New Zealand Journal of Psychiatry. 14(2):115-119, 1980.

Stimulus intensity control was investigated in 33 acutely depressed outpatients; the effects of doxepin and amitriptyline on cortical evoked potentials were compared. Cortical evoked potentials were found to be greater during depression than on recovery. Doxepin reduced amplitudes, amitriptyline had a similar, but nonsignificant effect. It is suggested that increased amplitudes of the late waves of cortical evoked potentials may be a characterictics of depressive illness. The effect of tricyclic antidepressants on cortical evoked potentials was most marked in the later components of the evoked waveform. 22 references. (Author abstract modified)

000764 Gold, Barry I.; Bowers, Malcolm B., Jr.; Roth, Robert H.; Sweeney, D. W. Dept. of Pharmacology, Uniformed Services University School of Medicine, Bethesda, MD 20014 **GABA levels in human cerebrospinal fluid: alterations in psychiatric disorders. (Unpublished paper).** Research Report, NIMH Grant MH-28216, 1979. 13 p.

GABA levels in the limbar CSF collected from patients with depression, psychosis, or undergoing evaluation for a neurological disorder were measured. GABA levels in the CSF from depressed patients were significant decreased as compared to neurological controls. CSF GABA in psychotics was not different from neurological patients, although the data suggest that levels may also be decreased in schizoaffective disorder. 19 references. (Author abstract)

000765 Gray, Peter N.; Dana, Sharon L. Dept. of Biochemistry and Molecular Biology, University of Oklahoma Health Sciences Center, OKlahoma City, Ok 73190 **GABA synthesis by cultured fibroblasts obtained from persons with Huntington's disease.** Journal of Neurochemistry. 33(5):985-992, 1979.

Skin fibroblasts were used to study the CABA system in patients with Huntington's disease (HD). Cell monolayers and homogenates of HD cells converted (14C) glutamate to (14C)GABA. GABA synthesis by HD cell homogenates was pyridoxal dependent and inhibited by aminooxyacetic acid. Disturbances in nonneuronal GABA metabolic pathways and in glutamate uptake were apparent when HD cells were compared with control cells. 50 references. (Author abstract modified)

000766 Greenblatt, David J.; Allen, Marcia Divoll; Locniskar, Ann; Harmatz, Jerold S.; Shader, Richard I. Clinical Pharmacology Unit, Massachusetts General Hospital, Boston, MA 02114 **Lorazepam kinetics in the elderly.** Clinical Pharmacology and Therapeutics. 26(1):103-113, 1979.

The kinetic properties of lorazepam (1.5 and 3.0mg i.v.) were assessed in 15 healthy young (19 to 38-year-old) and 15 healthy elderly (60 to 84-year-old) Ss. Volumes of distribution for lorazepam in the elderly were slightly but significantly smaller than in the young Ss. Elimination half-life was similar in the two groups, but total clearance was 22% less in the elderly than in the young Ss. Age differences in lorazepam were partly due to frequent cigarette smoking in the young Ss. Gender had no apparent effect on kinetics. Rapid and nearly complete absorption of lorazepam was observed in the elderly after oral or intramuscular administration. 31 references. (Author abstract modified)

000767 Hansen, Birger, Stensgaard; Dam, Mogens; Brandt, Jens; Hvidberg, Eigill F.; Angelo, Helle; Christensen, Jytte Molin; Lous, Per. Dam: University Clinic of Neurology, Hvidovre Hospital, DK-2650 Hvidovre, Denmark **Influence of dextropropoxyphene on steady state serum levels and protein binding of three anti-epileptic drugs in man.** Acta Neurologica Scandinavica. 61(6):357-367, 1980.

The influence of dextropropoxyphene (DPX) on the steady-state serum levels and protein binding of carbamazepine (CBZ), phenytoin (FPH) and phenobarbital (PB) was investigated in 16 epileptic patients. In patients on CBZ, serum levels increased after 6 days on DPX. In three of the patients, a further increase was seen after an additional week on DPX. One patient discontinued the DPX intake because of clinical signs of toxicity, but the remainder were clinically unaffected. CBZ epoxide levels declined simultaneously. For DPH only a doubtful increase was observed after 1 to 2 weeks on DPX. For PB, an average increase of 20% in serum level was noted after 1 week. The protein binding of CBZ and DPH was not affected. It is concluded that patients on CBZ should be treated only with DPX if monitored properly. Patients on DPH or PB should be followed carefully until further evidence is obtained. 17 references. (Author abstract modified)

000768 Herrmann, W. M.; Kropf, D.; Fichte, K.; Muller-Oerlinghausen, B. Abt. fur experimentelle und klin., Pharmakologie, Bundesgesundheitsamt, Postfach 33 00 13, D-1000 Berlin 33, West Germany **/EEG and psychoexperimental studies in healthy subjects on lithium medication./** Elektroenzephalographische und psychoexperimentelle Untersuchungen mit Lithium an gesunden Probanden. Pharmakopsychiatrie Neuro-Psychopharmakologie. 13(4):200-212, 1980.

Previous findings that plasma levels of 0.8 McM/l occur after acute and 0.5-0.6 McM/l during steady state conditions following 2 weeks of lithium administration in healthy volunteers were replicated with slightly higher plasma levels. Quantitative pharmaco-EEG, the Zerssen scale for mood, and psychosomatic complaint measures were administered. After acute administration, only a slight increase in psychosomatic complaints occurred and there was a tendency towards an increase in delta in the EEG. Under chronic treatment, a significant increase in power and decrease in flicker fusion frequency in comparison to placebo were found. Lithium had negative effects on vigilance and activation. In the routine test battery for classifying acute

effects of lithium could not be compared with such classic psychotropics as 10mg diazepam, 75mg chlorpromazine, 75mg imipramine, or 20mg dextroamphetamine. Other test models are required to demonstrate specific psychic effects. 25 references. (Journal abstract modified)

000769 Honda, Yutaka; Suzuki, Tokuji. Dept. of Neuropsychiatry, Faculty of Medicine, University of Tokyo, Japan **Transcultural pharmacokinetic study on Li concentration in plasma and saliva.** Psychopharmacology Bulletin. 15(4):37-39, 1979.

A presentation discussing Japanese and U.S. concentrations of Li in plasma and saliva is summarized which was delivered at the Seventeenth Annual Meeting of the American College of Neuropsychopharmacology, held in Maui, Hawaii, December 11 to 13, 1978. The review indicates that there are not enough investigations on transcultural comparisons, and a statistically valid analysis of pharmacokinetic parameters of Li is impossible to find at the present time. However, highly significant correlations have been observed between saliva and plasma Li concentrations. The saliva/plasma concentration ratios were: 2.63 plus or minus 0.84 in Japan; 2.26 plus or minus 0.23 in the U.S.; 2.13 plus or minus 0.31 in Germany; and 2.22 plus or minus 0.50 in India. Methodological recommendations are given for future international comparison of blood concentration of Li. 12 references.

000770 Hynek, K.; Filip, V. Psychiatric Research Unit, Ke Karlovu 11, 128 21 Prague 2, Czechoslovakia **The EEG effects of thyrotropin releasing hormone in healthy subjects and chronic schizophrenics.** Activitas Nervosa Superior. 21(3):173-174, 1979.

EEG response to a single dose of thyrotropin releasing hormone (TRH) was investigated in four chronic schizophrenic inpatients and in four healthy control Ss. EEGs were recorded pretreatment and 30, 120, and 240 minutes posttreatment. Results show that maximum EEG effects occurred 30 minutes posttreatment. In control Ss the integrated delta, theta, and alpha band activity decreased in the majority of scalp leads, whereas in the beta band the diminution was not so evident. In schizophrenic Ss, the TRH-induced changes were much less pronounced, especially in right and left parietooccipital regions.

000771 Janssen, Paul A. J. Janssen Pharmaceutica, Beerse, Belgium **/Psychopharmacology of haloperidol./** Psicofarmacologia del haloperidol. Acta Psiquiatrica y Psicologica de America Latina. 25(4):307-316, 1979.

Similarities and differences between the various neuroleptic drugs are examined. The fundamental mechanism of these drugs is the postsynaptic blockage of the noradrenergic and dopaminergic receptors. An important difference is potency; the dosage necessary to produce a specific effect can vary tremendously. Another radical difference is the relative duration of the drug's action. Still another variation is the speed of gastrointestinal absorption. Specific characteristics of haloperidol are compared to those of the following neuroleptics: chlorpromazine, prochlorperazine, perphenazine, trifluoperazine, fluphenazine, thioridazine, thiothixene, pimozide, and penfluridol. Haloperidol is found to have a greater potency and a more prolonged action than other neuroleptics.

000772 Johnsson, A.; Pflug, B.; Engelmann, W.; Klemke, W. Pflug: Universitats-Nervenklinik, Osianderstrasse 22, D-7400 Tubingen, Germany **Effect of lithium carbonate on circadian periodicity in humans.** Pharmakopsychiatrie Neuro-Psychopharmakologie. 12(6):423-425, 1979.

The effect of lithium carbornate on five groups of two volunteers living for 4 weeks under arctic summer conditions (Spitsbergen) isolated in huts, without time information was studied. All showed free run of their circadian temperature and activity/rest rhythms with periods longer than 24 hours. Under lithium carbonate, a period lengthening effect occurred. It is suggested that this finding could help to clarify the prophylactic effect of lithium salts in manic-depressive episodes. 4 references. (Author abstract modified)

000773 Jung, Donald; Powell, J. Robert; Walson, Philip; Perrier, Donald. Perrier: College of Pharmacy, University of Arizona, Tucson, AZ 85721 **Effect of dose on phenytoin absorption.** Clinical Pharmacology and Therapeutics. 28(4):479-485, 1980.

In a study of the effect of dose on phenytoin bioavailability, six healthy male Ss were given a single 15mg/kg i.v. dose, single oral doses of 400, 800, or 1600mg, or 1600mg in four divided doses. The extent of phenytoin absorption did not differ significantly across groups. The time to each maximum serum concentration of phenytoin increased from 8.4 hours for the 400mg dose to 13.2 hours for the 800mg dose and 31.5 hours for the 1600mg dose. It is suggested that the prolonged but complete absorption of large phenytoin doses is due to slow dissolution and continued absorption from the colon. 18 references. (Author abstract modified)

000774 Kanto, J.; Aaltonen, L.; Liukko, P.; Maenpaa, K. Dept. of Pharmacology, Turku University, Turku, Finland **Transfer of lorazepam and its conjugate across the human placenta.** Acta Pharmacologica et Toxicologica. 47(2):130-134, 1980.

Concentrations of lorazepam and its conjugate were determined in maternal venous serum, in umbilical vein and artery serum, and in amniotic fluid after intramuscular administration of 2mg during normal delivery or oral administration of 2.5mg prior to caesarean section. In both cases, unconjugated and conjugated forms of lorazepam were found in the umbilical circulation and amniotic fluid. The serum protein unbound fraction was 14.0% in maternal circulation and 20.8% in umbilical circulation. Generally, lorazepam was useful as an anxiolytic agent during normal delivery and as a sedative on the night before cesarean section. 30 references. (Author abstract modified)

000775 King, Robert B. Dept. of Neurosurgery, 750 East Adams Street, Syracuse, NY 13210 **Pain and tryptophan.** Journal of Neurosurgery. 53(1):44-52, 1980.

The effect of tryptophan, the precursor for serotonin, on five patients with recurrent pain was examined. Tryptophan diminished sensory deficits following rhizotomy and cordotomy. Their sensory deficits for both touch and pinprick expanded to the maximum extent initially recorded after their operative procedures. Their pain was again relieved. No clear understanding of the mechanisms responsible for these changes is proposed. However, it is speculated that a metabolic modulation of neurotransmitter functions is responsible for these clinical observations. 48 references. (Author abstract modified)

000776 Langer, Gerhard; Sachar, Edward J.; Nathan, R. Swami; Tabrizi, Mary Ann; Perel, James M.; Halpern, Frieda S. Psychiatrische Universitatsklinik, Lazarettgasse 14, A-1097 Vienna, Austria **Dopaminergic factors in human prolactin regulation: a pituitary model for the study of a neuroendocrine system in man.** Psychopharmacology. 65(2):161-164, 1979.

Dopaminergic factors in human prolactin regulation were investigated, and a pituitary model for the study of a neuroendocrine system in man is discussed. Incremental doses of dopamine hydrochloride were infused at a constant rate over 90 to 120 minutes after a fixed dose of a neuroleptic drug (sufficient for about half of the maximal prolactin response) had been given i.v. A dose of dopamine in the order of 15 to 60mcg/min appeared to match the loss of endogenous dopaminergic inhibition

due to the antidopaminergic effect of the neuroleptic drug. The lactotrophic cells of the pituitary gland are suggested to serve as a model in man for the study of some basic neurohormonal mechanisms. 10 references. (Author abstract modified)

000777 Levy, R. H.; Cenraud, B.; Loiseau, P.; Akbaraly, R.; Brachet-Liermain, A.; Guyot, M.; Gomeni, R.; Morselli, P. L. Dept. of Pharmaceutical Sciences and Neurological Surgery, Schools of Pharmacy and Medicine, University of Washington, Seattle, WA 98195 **Meal-dependent absorption of enteric-coated sodium valproate.** Epilepsia. 21(3):273-280, 1980.

The effect of meals on valproic acid (VPA) absorption from an enteric coated (EC) formulation was investigated. In Study 1, six adult normal volunteers received a single 500mg dose of sodium valproate in randomized treatments: fasting (A), with a meal (B), or 3 h after a meal (C). There were significant differences between treatments in the latency period (Lp). LP values for treatments A, B and C were 1.67 plus or minus 1.25 h, 6.75 plus or minus 3.98 h and 7.63 plus or minus 3.15 h respectively. In Study 2, six Ss received in a 400mg intravenous bolus dose of VPA and a 500mg EC VPA tablet 3 h after a meal. The mean Lp value was 8.1 plus or minus 1.6 h and the mean bioavailability was 100%. Clearance, volume of distribution and half life values obtained after intravenous dosing were comparable to literature values. The results indicate that food intake delays but does not decrease the extent of absorption of VPA from an enteric coated formulation. 25 references. (Author abstract modified)

000778 Loo, J. C. K.; Midha, K. K.; McGilveray, I. J. Health Protection Branch, Health and Welfare Canada, Ottawa, Ontario, Canada K1A 0L2 **Pharmacokinetics of chlorpromazine in normal volunteers.** Communications in Psychopharmacology. 4(2):121-129, 1980.

The mechanisms which account for the low bioavailability of chlorpromazine (CPZ) following oral solution and i.v. dose in normal volunteers were examined. Blood samples were collected over 48 hours post administration. The mean peak plasma concentrations was 1.1ng/ml. In order to assess the absorption kinetics, two of the volunteers received two single i.v. doses at 18 weeks interval and blood samples were collected over 54 hours post administration. The plasma CPZ concentrations obtained after i.v. doses were 10 to 20 fold greater than those following the oral route. Pharmacokinetic analysis of the oral and i.v. data indicated that gastrointestinal absorption obeys first order kinetics with t1/2 of approximately 1.5 hours and that less than 10% of the drug was absorbed into the systemic circulation. Further kinetic evaluation suggested that the low bioavailability could not be attributed entirely to the hepatic first pass metabolism. Factors such as metabolism in the gut wall, or protein binding processes prior to entry into the systemic circulation might account for the above phenomenon. 13 references. (Author abstract modified)

000779 Medzihradsky, Fedor; Cullen, Edward I.; Lin, Hsia-Lien; Bole, Giles G. Dept. of Biological Chemistry, University of Michigan Medical Center, Ann Arbor, MI 48109 **Drug-sensitive ecto-ATPase in human leukocytes.** Biochemical Pharmacology. 29(17):2285-2290, 1980.

The properties of ecto-ATPase in human leukocytes, including granulocytes and lymphocytes, were studied, and its interactions with a variety of drugs were characterized. The enzyme was found to be present in both granulocytes and lymphocytes, and exhibited higher activity and substrate affinity in the latter cells; Km values ranged from .06mM in lymphocytes to .3mM in the unresolved leukocyte fraction. Enzymatic activity had a pH optimum in the physiological range, required Mg2, and was insensitive to ouabain and CA2. Potent inhibitors of ecto-ATPase were tricyclic antidepressants and substituted phenothiazines, to which the enzyme in lymphocytes was most susceptible. These drugs also decreased the phagocytic ability of leukocytes. However, while drug inhibition of the enzyme was reversible by washing, the effect on phagocytosis was not. 29 references. (Author abstract modified)

000780 Muhlbauer, Hd.; Hardt, W. Psychiatrische Klinik, Freie Universitat Berlin, (Lithium-Katamnese), Eschenallee 3, D-1000 Berlin 19, West Germany **/The influence of lithium salts and antidepressant medication on serum prolactin level./** Der Einfluss von Lithium and Antidepressiva auf den serum-prolaktin-Spiegel. Pharmakopsychiatrie Neuro-Psychopharmakologie. 13(4):213-217, 1980.

The prolactin level (hPRL) in the serum of 17 patients (10 females and 7 males) with (manic-depression) was determined before and after treatment with lithium salts. All patients were free of acute psychotic depressive symptoms. However, nine received moderate doses of additional antidepressive medication continuously for 4 weeks. No significant changes in serum hPRL were observed in the group and lithium serum levels were within the normal therapeutic range. The mean hPRL level in patients with concomitant antidepressive medication was significantly higher as compared to the lithium only group, but never exceeded the normal range in both groups. It is suggested that lithium does not influence hPRL serum level if no special methods of hPRL stimulation are used. Recent evidence suggests that beside dopaminergic influences, serotonergic mechanisms play an important part in hPRL regulation, and the prolactin response in lithium treated patients therefore warrants further investigations using serotonergic stimulation methods. 25 references. (Journal abstract modified)

000781 Nelson, J. Craig; Jatlow, Peter I. Dept. of Psychiatry, Yale University School of Medicine, 333 Cedar Street, New Haven, CT 06510 **Neuroleptic effect on desipramine steady-state plasma concentrations.** American Journal of Psychiatry. 137(10):1232-1234, 1980.

The effect of neuroleptic drugs of desipramine steady-state plasma concentration was investigated in 15 nondelusional unipolar depression patients treated with desipramine alone and in 15 delusional patients (n=10 major depressive episode psychotic and 5 schizoaffective disorder) treated with desipramine plus an antipsychotic (perphenazine, haloperidol or thiothixene). All patients received similar mg/kg doses of desipramine. Patients who also received a neuroleptic drug showed desipramine plasma levels twice those of the desipramine only group. Although previous reports suggest that metabolism of various tricyclic drugs may be impaired by different antipsychotic drugs, results suggest that desipramine may be particularly sensitive to this effect. The implications of the magnitude of this difference for therapeutic response and incidence of side-effects is discussed. 13 references. (Author abstract modified)

000782 Oules, M. J.; Boscredon, J. no address **/Contribution to study of cerebral dopaminergic mechanisms: reality of the problem./** Contribution a l'etude des mecanismes dopaminergiques cerebraux: actualite du probleme. Annales Medico-Psychologiques. 137(9):925-929, 1979.

The cerebral dopaminergic mechanisms of the dopamine agonist piribedil are discussed. Piribedil is similar to dopamine and other known dopaminergic agents. Due to the side-effects of the drug (trembling, hypertonia, and dyskinesia), the symtomatology may often be confused with Parkinson's disease, especially when higher levels of the drug have been administered. Piribedil is known to affect the following dopaminergic routes:

the infundibulotuberal, the mesolimbic and the mesocortical. 14 references.

000783 Perucca, E.; Richens, A. Richens: University Dept. of Clinical Neurology, National Hospital, Queen Square, London WC1N 3BG, England **Reversal by phenytoin of carbamazepine-induced water intoxication: a pharmacokinetic interaction.** Journal of Neurology, Neurosurgery, and Psychiatry. 43(6):540-545, 1980.

The hypothesis that phenytoin may antagonize the antidiuretic effect of carbamazepine was examined by comparing the free water clearance response to a standard water load in 36 patients stabilized on different drug regimens. The diuretic response to the water load was significantly greater in patients receiving chronic treatment with carbamazepine and phenytoin in combination than in matched control Ss receiving carbamazepine as a single drug. Acute administration of phenytoin, however, had no significant influence on carbamazepine-induced antidiuresis. Evidence is presented that reversal of the antidiuretic effect of carbamazepine by chronic phenytoin administration is secondary to a marked reduction of the serum carbamazepine concentration during combined therapy. These results suggest that the risk of developing water intoxication is greater in patients receiving carbamazepine alone than in those receiving phenytoin in combination. Since the antidiuretic effect is correlated with the serum carbamazepine concentration rather than with the prescribed daily dose, monitoring the serum level of the drug is likely to provide the best rational approach to the prevention of excessive water retention. 18 references. (Author abstract)

000784 Pfeifer, Henry J.; Greenblatt, David J.; Friedman, Paul. Greenblatt: Clinical Pharmacology Unit, Massachusetts General Hospital, Boston, MA 02114 **Effects of three antibiotics on theophylline kinetics.** Clinical Pharmacology and Therapeutics. 26(1):36-40, 1979.

Theophylline kinetics were determined in nine healthy Ss given therapeutic doses of erythromycin, tetracycline, or cephalexin. No changes in the clearance of theophylline after single i.v. doses were observed. Results provide no evidence of a kinetic interaction between theophylline and these commonly prescribed antiobiotics. 17 references. (Author abstract modified)

000785 Pynnonen, S.; Frey, H.; Sillanpaa, M. Dept. of Pharmacology, University of Turku, Kiinamyllynk. 8-10, SF-20520 Turku 52, Finland **The auto-induction of carbamazepine during long-term therapy.** International Journal of Clinical Pharmacology, Therapy and Toxicology. 18(6):247-252, 1980.

The plasma levels of carbamazepine (CBZ) and carbamazepine-10,11-epoxide (CBZ-E) were examined in 22 adult epileptics during chronic monotherapy. Healthy male volunteers during regular therapy of CBZ had a statistically significant decrease in their plasma drug levels during a period of 28 days. The same phenomenon was also registered in epileptic patients in the course of their long-term monotherapy with CBZ. Neither in volunteers nor in epileptics did any statistically significant change in the plasma levels of CBZ-E occur. Wide fluctuations between the fasting and peak plasma level of CBZ were found in epileptics. Neither the fasting nor peak plasma levels of the drug correlated in a statistically significant degree with the daily dose of CBZ. 32 references. (Author abstract modified)

000786 Rinieris, P. M.; Christodoulou, G. N.; Souvatzoglou, A. M.; Koutras, D. A.; Stefanis, C. N. Eginition Hospital, Vas. Sophias Ave., 74, Athens 611, Greece **Anxiety and thyroid activity in psychiatric patients.** Acta Psychiatrica Belgica. 79(1):75-81, 1979.

Possible correlations between the anxiety score and the free thyroxine index or the serum thyroxine values were studied. Eighty-six patients, hospitalized for schizophrenia or primary depressions, were administered 10mg of diazepam daily. After 1 week of treatment the patient's degree of anxiety was measured using Hamilton's scale, and thyroid function was investigated. Results indicate a very weak correlation between the anxiety score and the serum thyroxine values in the neurotic depressives and a significantly lower serum thyroxine and free thyroxine index values in the psychotic depressive patients. These results point to the need for further studies in both psychotic and neurotic depression. 14 references. (Author abstract modified)

000787 Rosenbaum, Alan H.; Schatzberg, Alan F.; Maruta, Toshihiko; Orsulak, Paul J.; Cole, Jonathan O.; Grab, Edwin L.; Schildkraut, Joseph J. Mayo Clinic, Department of Psychiatry, Rochester, MN 55901 **MHPG as a predictor of antidepressant response to imipramine and maprotiline.** American Journal of Psychiatry. 137(9):1090-1092, 1980.

To explore the hypothesis that depressed patients with low pretreatment levels of urinary 3-methoxy-4-hydroxyphenylglycol (MHPG) respond more favorably to antidepressant drugs which act on noradrenergic neuronal systems than do patients with high MHPG levels, 150 to 200 mg/day of imipramine or maprotiline was administered to 13 depressed patients. All of the five patients with low pretreatment MHPG levels responded to treatment compared to only one of the 14 patients with high MHPG levels; four patients dropped out of the study. The results are seen as supporting the hypothesis. 19 references. (Author abstract modified)

000788 Saletu, B.; Grunberger, J.; Linzmayer, L. Psychiatrische Abteilung, Universitatsklinik, Lazarettgasse 14, A-1097 Vienna, Austria **/Determination of the encephalotropic, psychotropic and pharmacodynamic properties of nicergoline by means of quantitative pharmaco-electroencephalography and psychometric analyses./** Bestimmung der enzephalotropen, psychotropen und pharmakodynamischen Eigenschaften von Nicergolin mittels quantitativer Pharmakoelektroenzephalographie und psychometrischer Analysen. Arzneimittel-Forschung. 29(8a):1251-1261, 1979.

The encephalotropic, psychotropic, and pharmacodynamic properties of 10-methoxy-1,6-dimethyl-ergoline-8beta-methanol-(5-bromonicotinate) (nicergoline), an antihypoxidotic ergot alkaloid, were investigated in 10 geriatric Ss by means of the quantitative pharmaco-EEG method and psychometric tests. In a double-blind study, the Ss received at randon and at weekly intervals, single oral doses of 15mg, 30mg, and 60mg nicergoline, and/or 5mg dihydroergotoxin-mesylate (DHETM) as reference compound and placebo. Neurophysiological, psychometric, and clinical examinations were performed at 0, 2, 4, 6, and 8 hours after medication. EEG changes were similar to other antihypoxidotic agents, and indicative of increased vigilance. This effect was noticeable with the lowest dose, and was strongest in the 6th to 8th hour after administration. Psychometric examinations showed a statistically significant improvement in learning ability after 30mg nicergoline compared to 5mg DHETM and placebo. 39 references. (Journal abstract modified)

000789 Sellers, E. M.; Giles, H. G.; Greenblatt, D. J.; Naranjo, C. A. 33 Russell St., Toronto, Ontario M5S 2S1, Canada **Differential effects on benzodiazepine disposition by disulfiram and ethanol.** Arzneimittel-Forschung. 30(5a):882-886, 1980.

The disposition of chlordiazepoxide, diazepam, oxazepam, and lorazepam was studied before and after administration of disulfiram or ethanol to normal Ss and alcoholic patients. After disulfiram administration, decreases in the plasma clearance of

chlordiazepoxide, diazepam, and their active metabolites were observed. Oxazepam and lorazepam have no important active metabolites and the effect of disulfiram on their net disposition was minimal. In normal Ss, ethanol appeared to inhibit diazepam N-desmethylation. In contrast, there was no significant change in the disposition of oxazepam in four healthy Ss after a single oral dose of ethanol. Thus, disulfiram and ethanol appear not to inhibit the metabolic disposition of oxazepam or lorazepam, benzodiazepine derivatives principally biotransformed by glucuronidation. On pharmacokinetic grounds, oxazepam and lorazepam may be the drugs of choice if benzodiazepine therapy is required in chronic alcoholics. 39 references. (Author abstract modified)

000790 Sellers, Edward M.; Greenblatt, David J.; Giles, H. G.; Naranjo, Claudio A.; Kaplan, H.; MacLeod, S. M. Addiction Research Foundation, 33 Russell St., Toronto, Ontario M5S 2S1, Canada **Chlordiazepoxide and oxazepam disposition in cirrhosis.** Clinical Pharmacology and Therapeutics. 26(2):240-246, 1979.

The disposition of chlordiazepoxide (CDX) was studied in 14 normal Ss and 11 patients with cirrhosis after i.v. infusion of 50mg over 10 minutes. Results suggest delayed formation and impaired elimination of desmethylchlordiazepoxide in patients with cirrhosis. The alterations in CDX clearance could not be correlated with the severity of liver disease. The kinetics of oxazepam were not greatly altered in cirrhosis, suggesting it may be the preferable drug for cirrhotic patients. 16 references. (Author abstract modified)

000791 Snyder, S. H. Dept. of Pharmacology, Johns Hopkins University School of Medicine, Baltimore, MD 21205 **Tricyclic antidepressant drug interactions with histamine and alpha-adrenergic receptors.** Pharmakopsychiatrie Neuro-Psychopharmakologie. 13(2):62-67, 1980.

Tricyclic antidepressant drug interactions with histamine and a alpha-adrenergic receptors are described in relevance to the energizing effects of these drugs and to their relief of psychomotor agitation. Preliminary in vitro studies have suggested that tricyclics are potent inhibitors of histamine stimulation of cyclic AMP formation and cyclic GMP accumulation. Whether blockade of histamine receptors modulates antidepressant actions produced primarily at other sites, contributes to side-effects, or is casually associated with antidepressant effects still requires further investigation. A close relationship between the ability of tricyclics, particularly the tertiary amines, to reduce psychomotor agitation and their affinities for postsynaptic alpha-noradrenergic receptors in brain membranes, has been found. For six tricyclic antidepressants, selective therapeutic efficacies for depressive psychomotor agitation versus psychomotor inhibition have been found to correlate with affinities for alpha-noradrenergic binding sites. 24 references. (Author abstract modified)

000792 Stromgren, L. Sand, Dahl, J.; Fjeldborg, N.; Thomsen, A. Aarhus Psychiatric Hospital, DK-8240 Risskov, Denmark **Factors influencing seizure duration and number of seizures applied in unilateral electroconvulsive therapy: anaesthetics and benzodiazepines.** Psychiatrica Scandinavica. 62(2):158-165, 1980.

The effects of choice of anesthetic and use of benzodiazepines on seizure duration and number of seizures applied in unilateral electroconvulsive therapy (ECT) were studied. In a controlled, double-blind, cross-over study with 19 patients, no differences were found between thiopentone and methohexitone regarding duration of seizures, number of treatments with insufficient seizure duration, or amount of energy applied. In a retrospective study concerning seizure duration in unilateral ECT, patients given benzodiazepines during treatment were compared with patients who received no such medication. The benzodiazepine group showed shorter seizure duration, more cases with insufficient seizure duration, and a need for a greater number of treatments. Impliations of the findings are considered. 18 references. (Author abstract modified)

000793 Sulser, Fridolin. Pharmacology Dept., Vanderbilt University School of Medicine, Nashville, TN **Pharmacology: current antidepressants.** Psychiatric Annals. 10(9):S28-S34, 1980.

The mode of action of current antidepressant drugs is reviewed within the framework of recent developments in molecular pharmacology pertaining to the regulation of central adrenergic receptor function. The biogenic amine hypotheses of affective disorders are reviewed. The modes of action of monoamine oxidase inhibitors (isocarboxazid, phenelzine, tranylcypromine, pargyline), tricyclics (amitriptyline, chlorimipramine, doxepin) and secondary amines (desipramine, nortriptyline, protriptyline) are examined; and drug interaction and metabolism are discussed. Drug and ECT effects on central noradrenergic receptors and their implications are also examined. A number of tables provide information on the major antidepressants and potential antidepressants (e.g., iprindole, mianserin, fluoxetine, nomifensine) with regard to their effects on monoamine uptake, eliciting subsensitivity of norepinephrine coupled adenylate cyclase system in brain, and regulation of central adrenergic receptor function. 5 references. (Author abstract modified)

000794 Szukalski, Bogdan; Wieniawska-Szewczyk, Ewa; Lipska, Barbara. Al. Sobieskiego 1/9, 02-957 Warsaw, Poland / **Steroid hormones and CNS activity.**/ Hormony sterydowe a czynnosc osrodkowego ukladu nerwowego. Psychiatria Polska. 13(3):287-294, 1979.

A study reviewing the effect of steroid hormones on the CNS is presented. The interaction of the hormones with the receptors and the metabolic conversion of steroids in the CNS is described. The effects of testosterone and androgen metabolism are also discussed. Catechol estrogen levels are related to sexual behavior, maturation, depression, migraine, and epileptic tremors. The effect of corticosteroids on the metabolism of neurotransmitters is described in terms of the regulation of serotonin levels. These results suggest that hormones of the adrenal cortex interfere with brain catecholamine O-methyltransferase activity in the inferior colliculus. 39 references.

000795 Takeuchi, Y. Department of Neuropathology, Brain Research Institute, Niigata University, Japan **The ultrastructural changes of synapses in rat following long-term administration of the neuroleptics reserpine and haloperidol.** Psychiatria et Neurologia Japonica. 81(7):445-464, 1979.

The long-term effects of antipsychotic drugs on the CNS ultrastructure were observed in 40 adult male rats of the Wistar strain. Ss were administered 0.58mg/kg/day of reserpine and 0.86md/kg/day of haloperidol. Following sacrifice, the frontal cortex, Ammon's horn, thalamus, hypothalamus, putamen, globus pallidus, substantia nigra, locus caeruleus, and dentate nucleus were examined. Based on the observed ultrastructural changes, inferences were drawn that the site of the pharmacological action of the antipsychotics involves the presynapses and postsynapses of the substantia nigra in the CNS, and that the substantia nigra is the main pathological substrate of drug-induced extrapyramidal syndrome, such as observed in tardive dyskinesia and Parkinsonism. 53 references. (Author abstract modified)

000796 Tong, Theodore G.; Benowitz, Neal L.; Kreek, Mary Jeanne. San Francisco General Hospital Medical Center, 1001 Potrero Ave., San Francisco, CA 94110 **Methadone-disulfiram**

interaction during methadone maintenance. Journal of Clinical Pharmacology. 20(8-9):506-513, 1980.

Disulfiram (500mg/day for 7 days) did not significantly inhibit methadone metabolism in seven Ss on methadone maintenance. Mean trough plasma methadone concentrations were lowered and terminal half-lives were shortened by disulfiram, but these effects were not significant. The ratio of urinary methadone to its pyrrolidine metabolite decreased during disulfiram treatment, suggesting enhanced N-demethylation. Disulfiram had no effect on opiate intoxication or abstinence symptoms. 24 references. (Author abstract modified)

000797 Valette, A.; Reme, J. M.; Pontonnier, G.; Cros, J. Inserm U. 168, Hopital La Grave, F-31,000 Toulouse, France **Specific binding for opiate-like drugs in the placenta.** Biochemical Pharmacology. 29(19):2657-2661, 1980.

The properties of human placental opiate binding sites were analyzed using (3H)etorphine, and kinetic parameters, specificity, subcellular distribution, and the effects of ionic environment were assessed. In vitro, these sites display a pharmacological profile similar to that of the pituitary opiate receptor sites. In particular, they exhibit lower affinities for opioid peptides than do brain opiate receptors. They were detected exclusively in human placenta, in which they appeared during the first half of pregnancy. 20 references. (Author abstract modified)

000798 Volavka, Jan; Bauman, Joan; Pevnick, Jeffrey; Reker, Dean; James, Barbara; Cho, Dong. Dept. of Psychiatry, New York University School of Medicine, Manhattan Psychiatric Center, Ward's Island, NY 10035 **Short-term hormonal effects of naloxone in man.** Psychoneuroendocrinology. 5(3):225-234, 1980.

The short-term hormonal effects of naloxone in man were investigated. Twenty mg naloxone was administered to 13 normal male volunteers in a placebo controlled, double-blind experiment. Two pain tests were conducted after each injection. Plasma levels of adrenocorticotropic hormone (ACTH), cortisol, luteinizing hormone (LH), testosterone, prolactin, growth hormone, and thyroid stimulating hormone (TSH) were determined repeatedly. Subjective responses were also studied. Naloxone elicited significant increases of ACTH, cortisol, and LH. These changes started prior to the first pain test. These data suggest that endorphins play a role in the regulation of ACTH and LH secretion in man. Naloxone also tended to increase the plasma levels of growth hormone and to elicit a slight hyperalgesia. These effects were not statistically significant. No effects of naloxone on prolactin or thyroid stimulating hormone were detected. Subjective responses to naloxone and placebo were not significantly different from each other. 39 references. (Author abstract modified)

000799 Wolpert, E.; Jung, F.; Middelhoff, H. D.; Piegler, T. Jung: Psychiatrische Klinik, Landgraf-Georg-Strasse 100, D-6100 Darmstadt, Germany **/Treatment of drug-induced dryness of mouth in psychiatric patients -- a controlled comparative study./** Zur Behandlung medikamentos bendingter Mundtrockenheit bei psychiatrischen Patienten -- Eine kontrollierte Vergleichsstudie. Fortschritte der Neurologie-Psychiatrie und ihrer Grenzgebiete. 48(4):224-233, 1980.

The effects of various substances on salivary secretion in 25 psychiatric inpatients suffering from depression or schizophrenic disorders were investigated. Salivary flow was measured and subjective feelings of thirst and mouth dryness were recorded by self-constructed tests. Only Glandosane, a new synthetic saliva, and Distigminbromide compensated mouth dryness. The recorded amount of salivary flow was within the range of normal controls. There were no significant correlations between the subjective test answers and the objective measurement of salivary rate. Improvement of depression by Glandosane could not be observed. However, patients treated with Glandosane felt more comfortable whereas those treated with Distigminbromide suffered side-effects of digestive and urinary disorders and changes in perspiration. 10 references. (Journal abstract modified)

14 MECHANISM OF ACTION: BEHAVIORAL

000800 Benesova, O. Dept. of Pharmacology and Physiology, Medical Faculty of Hygiene, Charles University, Prague, Czechoslovakia **Pharmacology of nootropic drugs.** In: Benesova, O., 21. Annual Czechoslovak Psychopharmacological Meeting. Jesenik Spa, Czechoslovakia, 1979. 140 p. (p. 20-32).

The pharmacology of the nootropic drugs, particularly meclophenoxate (centrophenoxine), pyrithioxine, and piracetam, is discussed with reference to learning/acquisition, retention/consolidation, and retrieval (including recognition and recall) from memory store. The molecular structure, site and mechanism, and psychopharmacological and side-effects of each of the above three agents is reviewed. Meclophenoxate induces an increased utilization of glucose and is therefore efficient in the treatment of disorders caused by anoxia of various origins (e.g., intoxication, trauma, brain ischemia). Pyrithioxine improves glucose and RNA metabolism and has been studied in protein/calorie malnourished rats and in psychasthenic and mentally retarded children, as well as high-risk neonates. Piracetam, a cyclic derivative of GABA, activates the bioenergetic metabolism of the CNS. It has been used in the treatment of cranial trauma, chronic alcoholism, withdrawal syndrome, and psycho-organic syndromes in the aged. Research being done on the nootropic effects of the oligopeptides and polypeptides present in the hypophysis or hypothalamus is also noted. 77 references.

000801 Berger, F. M. University of Louisville, Louisville, KY 40208 **Effect of antianxiety drugs on fear and stress.** Behavioral Science. 25(4):315-321, 1980.

The literature on the use of benzodiazepines and other anxiolytics is reviewed with reference to physician decision-making in the prescription of such drugs for anxiety, fear, emotional stress, and life crises. While fear, anxiety, and stress are often used interchangeably, in medical usage, anxiety denotes a state caused by an internal danger, fear a response to external danger, and stress the sum total of bodily responses which occur when the organism has to adapt to change. The antianxiety tranquilizers relieve anxiety and certain other neurotic symptoms, but do not counteract stress, fear, or anxiety caused by schizophrenia and other psychiatric disorders. The antianxiety drugs are now being most frequently prescribed for relief and prevention of the emotional distress that might accompany a physical disorder. Somatic illness can cause stress and fear, but does not usually induce neurotic anxiety. In patients suffering from physical disorders, treatment with antianxiety drugs appears justifiable only in the presence of an underlying psychoneurotic disorder. 54 references. (Author abstract modified)

000802 Drachman, David A.; Sahakian, B. J. Dept. of Neurology, University of Massachusetts Medical Center, 55 Lake Ave. N., Worcester, MA 01605 **Memory and cognitive function in the elderly: a preliminary trial of physostigmine.** Archives of Neurology. 37(10):674-675, 1980.

The effects of physostigmine salicylate on memory and cognitive functions was examined in 13 normal elderly subjects and compared with 20 elderly control subjects. Memory storage and intellectual function were measured. The results show a consistent trend toward improvement in the physostigmine treated group. A considerable increase in memory storage was seen and the physostigmine treated group scored 12% higher than the

control group on the given tests. It is concluded that the possibility that the slowly progressing intellectual impairment seen in the normal elderly might be improved by pharmacologic stimulation of marginal neural elements is supported by these results. 9 references.

000803 Hassmannova, J.; Myslivecek, J.; Romoliniova, A. Dept. of Physiology, Medical Faculty of Hygiene, Charles University, Prague, Czechoslovakia **Piracetam and retrieval of memory in young rats.** In: Benesova, O., 21. Annual Czechoslovak Psychopharmacological Meeting. Jesenik Spa, Czechoslovakia, 1979. 140 p. (p. 69-72).

Memory retrieval in active avoidance was examined in normal (N) rats and in rats treated with intraperitoneal injection of saline (S) or piracetam (P). Animals were 35 days old. During learning both P and S animals need fewer trials to criterion than untreated controls; no difference was found between S and P rats. Memory retrieval after P was enhanced at all intervals relative to untreated controls; the level of statistical significance was met only at 10 min after learning, and this was also true of S animals. Application of P cancelled the first decrease of retrieval at the 10th min and even enhanced the maximum at the 20th min. The enhancement of retrieval at the 10th min in the S group was followed by an impairment 20 min after meeting criterion. Results indicate that piracetam has a stabilizing effect on memory trace processing. Two kinds of influences are likely to be involved: nonspecific activation probably increasing the motivation level which is also observed after S injection; and piracetam-induced changes in the brain chemistry. 14 references.

000804 Haug, Trond; Gotestam, K. Gunnar. Dept. of Psychiatry, Ostmarka Hospital, P.O. Box 3008, N-7001 Trondheim, Norway **Reinforcing, discriminative and activating properties of amphetamine.** Addictive Behaviors. 5(3):199-208, 1980.

Different actions of the stimulant drug amphetamine were examined in five experimental series. The discriminative properties were tested in a conventional setting where the drug functioned as a cue for food reinforced behavior. The activating properties were dealt with in a food reinforced schedule where the drug was administered noncontingent on behavior. It is relatively easy to isolate the reinforcing and discriminative properties of amphetamine and to demonstrate how these control behavior. The activating effects are more difficult to assess but they seem to be of minor importance in this kind of experiment. 9 references. (Author abstract modified)

000805 Hrbek, J.; Macakova, J.; Komenda, S.; Dostalova, K. Institute of Pathological Physiology, Faculty of Medicine, Palacky University, Olomouc, Czechoslovakia **Influence of pyrithioxine, meclophenoxate and piracetam on the learning process in man.** In: Benesova, O., 21. Annual Czechoslovak Psychopharmacological Meeting. Jesenik Spa, Czechoslovakia, 1979. 140 p. (p. 96-101).

In four independent experimental series, the influence of three nootropic drugs (pyrithioxine, meclophenoxate, and piracetam) and of placebo on the formation of three conditioned special word associations was examined in 15 young, healthy, male and female volunteers. Studies were conducted during the morning hours. Data indicated that the most striking improvements in performance (in terms of necessary repetitions, correct responses, and response frequency) occurred after meclophenoxate and pyrithioxine administration. The observed changes appeared to be brought about by considerable improvement on the formation of conditioned word associations mediated by complex tactile stimulations. After piracetam administration, no improvement was achieved. This result can be explained by the relatively low dose used in these studies as compared with experiments by others. 5 references. (Author abstract modified)

000806 Hrbek, Jan; Macakova, J.; Komenda, S.; Siroka, A. Dept of Pathological Physiology, Medical Faculty of the Palacky University, Dr. S. Allende St. 3, 775 15 Olomouc, Czechoslovakia **Acute effect of benzoctamine (10 mg), sodium hydroxybutyrate (2g) and fencamfamine (10 mg) on verbal associations.** Activitas Nervosa Superior. 21(3):187-188, 1979.

The effects of benzoctamine, sodium hydroxybutyrate, and fencamfamine on conditioned verbal associations were investigated in 16 healthy university student volunteers. Effects were assessed before, and 1 and 2 hours following peroral drug administration. Investigation sets consisted of two optic, two complex tactile, and two acoustic associations. Criteria for evaluation of the results were number of repetitions necessary for mastering the task, number of correct responses, and frequency of responses in the first eight repetitions of the set. After 2 hours, a significant impairment in repetitions necessary for mastering the task and number of correct responses were produced by sodium hydroxybutyrate, especially when the artificial conditioned speech connections were established by means of the applied acoustic stimuli. 2 references.

000807 Jain, Suman; Kyriakides, Mary; Silverstone, Trevor; Turner, Paul. Silverstone: Academic Unit of Human Psychopharmacology, Medical Colleges of St. Bartholomew's, London, England **The effect of small and moderate doses of d-amphetamine on hunger, mood, and arousal in man.** Psychopharmacology. 70(1):109-111, 1980.

The effects of small and moderate doses of d-amphetamine on hunger, mood, and arousal were investigated in humans in a double-blind study. Each S participated in three experimental sessions, 1 week apart, when they received either 1mg d-amphetamine, 10mg d-amphetamine, or placebo, according to a random schedule. Visual analogue rating scales for hunger, mood, and arousal were completed prior to drug administration and at 30 min intervals for 4 h. A questionnaire related to sleep pattern and side-effects was completed the morning after each experimental session. Administration of d-Amphetamine (10mg) produced a significant reduction in number ratings as compared with placebo at 2 h and 2.5 h after administration, while 1 mg d-amphetamine had no significant effect on hunger. Mood and arousal were only slightly elevated by 10mg d-amphetamine, and not at all by 1 mg d-amphetamine. 8 references. (Author abstract modified)

000808 Karras, A.; Kane, J. M. Queens Hospital Community Mental Health Center, 82-68 164th St., Jamaica, NY 11432 **Naloxone reduces cigarette smoking.** Life Sciences. 27(17):1541-1545, 1980.

In a double-blind drug/placebo crossover design, naloxone hydrochloride was found to reduce the cigarettes smoked by chronic smokers over a 3 hour period. The number of puffs was reduced by 32%, the weight of the amount smoked by 33%, and the number of trials in which cigaretts were smoked by 30%. The extent of the decrease in smoking was related to the amount of the decrease in the desire to smoke. There were no physiological differences or side-effects between the two conditions, and neither Ss nor experimenters were able to distinguish between the two. These findings are similar to the suppressive effects of naloxone on food, water, and ethanol intake in animals and suggest that the endorphines are implicated. A heuristic theory of addiction is presented to explain these diverse effects. 21 references. (Author abstract)

000809 Krejci, I.; Kupkova, B. Research Institute for Pharmacy and Biochemistry, Prague, Czechoslovakia **Effect of drugs on**

learning and memory processes in simple behavioral tests. In: Benesova, O., 21. Annual Czechoslovak Psychopharmacological Meeting. Jesenik Spa, Czechoslovakia, 1979. 140 p. (p. 57-61).

The effects of three structurally different drugs (N-alpha-glycl-gycyl-glycyl/8-lysine/des-9-glycinamide-vasopressin, L-prolyl-L-leucyl-beta-alanine amide, and 1-/4-methyl-piperazinocarbonylmethyl/-2-pyrrolidone/hydrogen maleate) on learning and memory processes in the rat were studied using two simple behavioral tests: passive-avoidance response and rate of acquisition of a simple schedule of operant behavior. The results showed that facilitation of learning and memory can be demonstrated in simple behavioral tests, although the drugs used were pharmacologically, endocrinologically, and biochemically diverse in their actions. Postshock drug administration effects on passive-avoidance behavior can be assumed to influence primarily memory storage processes; injection prior to a retention or retrieval test mainly modifies retrieval of the learned response; and administration of drugs before sessions of operant behavior could influence both acquisition of the task and processing of the acquired information. According to their effects on these tests, the drugs could be differentiated to some degree. Methodological problems in controlling for drug effects on processes other than learning (arousal, motivation, sensory processing) are noted. 3 references.

000810 Kropf, D. Psychiatrische Klinik, Freie Universitat Berlin, Eschenallee 3, D-1000 Berlin 19, West Germany **/A psychological view on problems and concepts of lithium research./** Probleme und Konzepte der Lithium-Forschung aus psychologischer Sicht. Pharmakopsychiatrie Neuro-Psychopharmakologie. 13(4):168-174, 1980.

Different theories for interpreting the effects of lithium treatment on mental disorders are examined. Three conceptual possibilities are offered from a psychological viewpoint: 1) lithium-induced direct effects on psychotic symptoms interferes with other psychotic symptoms or with nonpsychotic processes; 2) these direct effects on normal psychic functions during the free interval in patients or in normal volunteers interfere with other psychic functions; and 3) lithium-induced effects on normal psychic functions are related to the prophylactic response. Independent of the actual findings of empirical studies, a theoretical question always arises: should psychotic phenomena be conceived as categorically different from normal psychological phenomena. The possibility of conditions such as Tellenbach's typus melancholicus and depression as specifications of normal psychic processes is examined within this context, along with the likelihood of a conditional relationship between primary personality and psychosis. 29 references. (Journal abstract modified)

000811 Kumpel, Q. Psychiatric Hospital, Opava, Czechoslovakia **Nootropic drugs in clinical practice.** In: Benesova, O., 21. Annual Czechoslovak Psychopharmacological Meeting. Jesenik Spa, Czechoslovakia, 1979. 140 p. (P. 33-39).

Clinical use of the nootropic drugs, meclophenoxate, piracetam, and pyrithioxine in gerontopsychiatry is discussed. Special problems associated with psychopharmacological treatment of the elderly are reviewed, as are nosological and methodological issues in nootropic research. A review of studies of these drugs indicates that they improve the dynamics of elderly patients, and consequently their sociability and orientation. Improved vigilance and short-term memory function have also been found. However, treatment with these drugs is only effective if the cortical substrate is still capable of restoration: in states of severe dementia with disorders of consciousness, treatment has had no success. Use of rating scales to evaluate the severity of the clinical state makes it possible to determine prognostically when a therapeutic effect can still be achieved and when the outcome of therapy is problematic. Side-effects of these drugs, including insomnia, agitation, and cardiotoxicity are also discussed.

000812 Kupietz, Samuel S.; Richardson, Ellis; Gadow, Kenneth D.; Winsberg, Bertrand G. Division of Child Mental Health, Long Island Research Institute, SUNY, Stony Brook, NY 11794 **Effects of methylphenidate on learning a 'beginning reading vocabulary' by normal adults.** Psychopharmacology. 69(1):69-72, 1980.

Nine adults were taught 96 Chinese characters under placebo or 5 or 10mg methylphenidate. Lists were composed of 12 characters and their English equivalents. All items were presented prior to the start of practice trials (simultaneous method) or each item was introduced as the subject practiced items previously presented (progressive method). Overall performance was significantly facilitated by the 5mg dose of methylphenidate, but only when the simultaneous method was used. Results suggest that drug effects are likely to be most pronounced in difficult learning situations and that dosage is an important variable. 16 references. (Author abstract modified)

000813 Ludin, H. P. Neurological Clinic, University Hospital, Bern, Switzerland **Improvement of L-dopa induced dyskinesia and of on-off-phenomenon by bromocriptine.** Acta Neurologica Belgica. 80(1):5-9, 1980.

Thirteen patients with parkinsonism (eight men and five women) whose earlier treatment with L-dopa had resulted in severe dyskinesia (13 patients) and the on/off phenomenon (nine patients) were switched to a new regimen including bromocriptine. In all 13 patients the treatment with bromocriptine led to an obvious reduction in dyskinesia with regard to intensity, extent, and frequency. The on/off phenonmenon, from which nine patients suffered, decreased considerably. In four cases it could be suppressed completely. It is suggested that the additional administration of bromocriptine, together with a reduction in levodopa dosage, constitutes the best method currently available for combatting levodopa-induced dyskinesia and the on/off phenomenon. 19 references.

000814 Miyakawa, Taihei; Shikai, Isao. Dept. of Neurology, Toxiocology Institute, Kumamoto University Medical School, Kumamoto, Japan **Hallucinatory and delusional states in connection with blood pressure and EEG.** Folia Psychiatrica et Neurologica Japonica. 33(1):9-13, 1979.

Blood pressure (BP) and EEG were examined in 22 psychiatric inpatients with low BP and manifesting acute delusional and hallucinatory states. Of these, 19 showed low voltage fast waves in EEG. During treatment with haloperidol, the symptoms, as well as BP and EEG, showed improvement. In these cases, hallucinatory and delusional states were of sudden onset, suggesting a possible relation between this symptom and a disturbance of cerebral blood circulation. All patients responded well to haloperidol, which has the effect of increasing the arousal period through action on the lower brain. It is possible that the low voltage fast waves found in EEGs is due to hyperexcitation of the neocortex, resulting in a disharmony of upper and lower brain function. Further research into the mechanisms of delusional and hallucinatory states is recommended. 9 references. (Author abstract modified)

000815 Myslivecek, J.; Hassmannova, J.; Stastna, D. Institute of Hygiene and Epidemiology, Prague, Czechoslovakia **The influence of nootropic drugs on learning and memory of defense reactions.** In: Benesova, O., 21. Annual Czechoslovak Psychopharmacological Meeting. Jesenik Spa, Czechoslovakia, 1979. 140 p. (p. 62-68).

A series of experiments were conducted to examine the effects of two nootropic drugs, piracetam and pyrithioxine, on learning and memory of defense reactions in the rat. In experiment 1, rats reared in normal environmental conditions and those reared in a confined, dark, and crowded environment but administered piracetam before testing on a simple escape task, did not differ significantly from each other, but performed significantly better than environmentally deprived/stressed rats given water prior to testing. A second study showed that piracetam and pyrithioxine returned learning and memory performance in a maze escape task to normal values in stressed (by manipulations for intraperitoneal injection) rats relative to saline injected controls, and improved performance somewhat relative to intact (unstressed) rats. Piracetam appeared to be more effective with learning, pyrithioxine with memory retrieval. Finally, an evaluation of passive avoidance retention showed a nonsignificant tendency toward better performance of animals treated with both drugs. 12 references.

000816 Nerad, J.; Vojtechovsky, M. Psychiatric Hospital, Horni Berkovice, Czechoslovakia **Dissociation of the strychnine effect on visual and verbal memory in organic psychosyndromes.** In: Benesova, O., 21. Annual Czechoslovak Psychopharmacological Meeting. Jesenik Spa, Czechoslovakia, 1979. 140 p. (p. 102-105).

In two experiments involving 53 geriatric inpatients with diagnosis of organic psychosyndrome, the effects of strychnine on visual and verbal memory were examined. In these patients with clinically apparent memory disturbances, a selective effect of strychnine on learning and memory was established. Visually, there was an improvement of discriminative recognition 45 min after administration and the rate of forgetting was significantly diminished both at 45 min and 24 hr postadministration. On the other hand, neither the process of verbal learning and the rate of forgetting (extinction) was influenced by strychnine in the test of learning of 10 paired associates nor in the recall of free associations. In relation to long-term memory, strychnine even appeared to have a deteriorating effect on the 7th day. In a clinical study of strychnine in senile dementia, only 2 of 50 patients showed clinical improvement. It is suggested that studies of drugs which inhibit the effects of glycine in the CNS, as does strychnine, could represent a valuable model for influencing visual memory both experimentally and clinically. 3 references. (Author abstract modified)

000817 Nicolle, M. H.; Petrescou, L.; Julien, D. Clinique neurologique, Hopital Tenon, 4, rue de la Chine, F-75020 Paris, France **/Comparative study of sleep and state on awakening with two hypnotic diazepines./** Etude comparative du sommeil et de la qualite du reveil. Therapie. 34(5):575-583, 1979.

The effects on sleep and state on awakening were compared for two hypnotic diazepines and a placebo. The results indicate that state on awakening is related to the sleep quality. It is argued that a bad state on awakening should not be interpreted as a sign of poor tolerance of a drug, with the exception of cases when this bad state follows a good night of sleep. 6 references. (Journal abstract modified)

000818 Oldham, A. J. Guy's Hospital, London, SE1, England / **Rapid control of acute patients through the administration of haloperidol./** El control rapido del paciente agudo mediante la administracion de Haloperidol. Acta Psiquiatrica y Psicologica de America Latina. 25(3):229-232, 1979.

The use of haloperidol in large doses as a tranquilizer for acute patients between 1964 and 1967 in the General Hospital of St. Olave in Bermondsey, England was studied. Patients treated with a larger dosage (between 10 and 30 mg) of haloperidol were in a state of abnormal psychomotor activity when admitted, were initially confined to bed, and were gradually allowed to leave bed after a minimum of 3 days, when dosage was substantially decreased. The results show complete control of the acute agitation in 73% of the patients, partial control in 22% and no control in 5%. A total or partial remission took place within the first 72 hours in 78% of the cases and in 96 hours in 10%. More time was generally needed to control male patients. The study proves that in the treatment of acute agitation, haloperidol in large doses is probably the fastest and most reliable method of control. Psychiatric teams in every general hospital should be trained in its use. 6 references.

000819 Opgenoorth, Elfriede; Lenz, G.; Sperlich, S.; Wytek, R. Psychol. Labor, Psychiatrisch Universitatsklinik, Lazarettgasse 14, A-1090 Vienna, Austria **/Assessment of multivariate relationships in reactivity of patients receiving lithium therapy./** Multivariate Zusammenhange im Leistungsverhalten von Lithium-Patienten. Pharmakopsychiatrie Neuro-Psychopharmakologie. 13(4):182-199, 1980.

A group of patients under long-term lithium therapy was examined for performance on reaction task, mood, and attitude toward lithium therapy, reaction-time toi simple acoustic or visual stimuli, as well as reactivity in complex settings under power and speed conditions requiring psychomotoric response represent the bulk of the data. Significant effects of additional medication, sex and duration of lithium therapy were assessed by univariate and multivariate data analaysis. A hierarchical cluster analysis resulted in five interpretable clusters. The clusters demonstrate the importance of attitude and other different psychological variables (e.g., morning/evening conditions). 24 references. (Journal abstract modified)

000820 Riordan, Charles E.; Kleber, Herbert D. Dept. of Psychiatry, Yale University School of Medicine, New Haven, CT 06519 **Rapid opiate detoxification with clonidine and naloxone.** Lancet. No. 8177:1079-1080, 1980.

A 4 day inpatient opiate detoxification program using clonidine and naloxone is reported in a letter to the editor. On day 1, the patient is pretreated with clonidine 6 mugram/kg in three doses 6 to 8 hr apart. On day 2, 11 microgram/kg clonidine is given in three doses, and naloxone .4mg intramuscularly is given every 2 hr for six doses. On day 3, the patient receives two doses 6 microgram/kg clonidine, and 8mg naloxone is given every 2 hr. On day 4, the patient is given 1.2mg naloxone at 8 pm after his last dose of clonidine. If no withdrawal symptoms to this dose are shown, he is considered to no longer be tolerant to narcotic drugs, and other appropriate treatment, including narcotic antagonists such as naltrexone, may be started immediately. This procedure has been used to successfully detoxify three daily heroin users and one long time (25mg/day) methadone user. All had had previous experience with withdrawal symptoms and a variety of withdrawal techniques, and reported a preference for this method. 7 references.

000821 Rosenberger, Peter B. Pediatric Neurology Unit, Harvard Medical School, Massachusetts General Hospital, Boston, MA 02114 **Dopaminergic systems and speech fluency.** Journal of Fluency Disorders. 5(3):255-267, 1980.

In a paper presented at the First Annual Multidisciplinary Approach to Stuttering in May, 1979, the posibility of a specific pharmacologic effect upon an abnormal physiologic state, such as stuttering is proposed. Research indicating that haloperidol seems to be helpful in reducing dysfluencies among some stutterers is reported. While this seems to suggest that stuttering is caused by motor production which would be affected by a pharmacologic agent known to block the receptors of certain

neurotransmitters, it is suggested that consideration of the neurotransmitters involved, especially their relation to emotions, indicates that the action of the drug may be inconsistent with the linguistic approach to stuttering. 22 references.

000822 Roth, T.; Hartse, K. M.; Zorick, F. J.; Kaffeman, M. E. Sleep Disorders and Research Center, Henry Ford Hospital, Detroit, MI **The differential effects of short-and long-acting benzodiazepines upon nocturnal sleep and daytime performance.** Arzneimittel-Forschung. 30(5a):891-894, 1980.

Data are reviewed which compare the effects of short-acting and long-acting benzodiazepines upon sleep and upon waking performance. Unlike short-acting hypnotics with half-lives of up to 10 h (lorazepam, triazolam, and temazepam), long-acting hypnotics with half-lives of up to 100 h (flurazepam, ketazolam) produce suppression of both REM and Stage 3 to 4 sleep which persists during the drug withdrawal (recovery) period. The half-life of hypnotics is also directly related to the duration of residual effects upon daytime performance. Hypnotics with long half-lives (flurazepam) produce more prolonged performance decrements than hypnotics with short half-lives (temazepam). In insomniacs, both effects upon sleep and upon waking performance must be considered in the selection of a hypnotic. 15 references. (Author abstract modified)

000823 Spiegel, David. Dept. of Psychiatry and Behavioral Sciences, Stanford University Medical Center, Stanford, CA 94305 **Hypnotizability and psychoactive medication.** American Journal of Clinical Hypnosis. 22(4):217-222, 1980.

The effect of several commonly used psychoactive medications on hypnotizability in a population of psychiatric inpatients and outpatients is reported. Hypnotizability was measured with the Hypnotic Induction Profile among 115 psychiatric patients who were diagnosed according to research diagnostic criteria. Hypnotizability scores were analyzed on the basis of psychiatric diagnosis and medication received. No significant effects were found for antipsychotic, antidepressant medications, or lithium. However, those anxious patients receiving antianxiety agents obtained scores which were nearly higher than those without such medication. These data suggest that among a seriously disturbed psychiatric population, the use of appropriate psychoactive medications does not hamper hypnotizability and in certain cases the treatment effect of the medication may indeed improve it. 17 references. (Author abstract)

000824 Squire, Larry R.; Judd, Lewis L.; Janowsky, David S.; Huey, Leighton Y. VA Medical Center (V-116), 3350 La Jolla Village Drive, San Diego, CA 92161 **Effects of lithium carbonate on memory and other cognitive functions.** American Journal of Psychiatry. 137(9):1042-1046, 1980.

The effects of lithium carbonate on memory and cognitive function were studied in 16 psychiatric patients, who received lithium for 2 weeks and placebo for 2 weeks in a double-blind cross-over design. At the end of each treatment phase, subjects were administered a battery of memory and cognitive tests. As reported previously, lithium induced slowing of performance on certain of the perceptual motor tests; however, lithium did not cause memory impairment or a change in self-assessment of memory functions. It is supposed, therefore, that lithium's effect on memory, at doses of 0.5 to 1.2 mEq/liter, is rather unremarkable. 27 references. (Author abstract modified)

000825 Staak, M.; Raff, G.; Strohm, H. Institute of Forensic Medicine, University of Tubingen, Naegelestrasse 5, D-7400 Tubingen, Germany **Pharmacopsychological investigation of changes in mood induced by dipotassium chlorazepate with and without simultaneous alcohol administration.** International Journal of Clinical Pharmacology, Therapy and Toxicology. 18(7):283-291, 1980.

The effects on subjective well-being of a single oral dose of 20mg dipotassium chlorazepate (DPC) with and without concurrent alcohol administration (lg/kg) were tested on 14 male students. A reciprocal effect on the pharmacokinetics was not detected. The personal feeling scale and the semantic differential revealed an emotional damping 90 minutes after oral administration of DPC in the evening test. Under concurrent alcohol administration the typical alcohol euphoric effect was increased by DPC and the dysphoric symptoms were reduced the following morning. 22 references. (Author abstract)

000826 Van Putten, Theodore; May, Philip R. A.; Jenden, Donald J.; Cho, Arthur K.; Yale, Coralee. Veterans Administration Medical Center, Wilshire and Sawtelle Boulevards, Los Angeles, CA 90073 **Plasma and saliva levels of chlorpromazine and subjective response.** American Journal of Psychiatry. 137(10):1241-1242, 1980.

Newly admitted schizophrenic patients (n=48) were given a test dose of 2.2 mg/kg of chlorpromazine chloride by mouth. Chlorpromazine was measured in plasma and saliva at 1, 2, 3 (saliva only), 4, 6, 8, 12 (saliva only), and 24 hours by gas chromatography/mass spectography. Subjective response at 4 and 24 hours after test dose was not significantly related to either plasma or saliva level, even for dysphoric responders. Dysphoric responses to chlorpromazine appeared to be sporadic, rooted perhaps in altered receptor sensitivity or in a patient's very personal interpretation of drug effect. 9 references. (Author abstract)

000827 Washton, Arnold M.; Resnick, Richard B.; Rawson, Richard A. Division of Drug Abuse Research and Treatment, Dept. of Psychiatry, New York Medical College, New York, NY 10029 **Clonidine for outpatient opiate detoxification.** Lancet. No. 8177:1078-1079, 1980.

In a letter to the editor, results of a study of outpatient detoxification using clonidine to control withdrawal distress in 88 opiate addicts are reported. All subjects had been addicted to opiates for at least 2 years and all requested detoxification; 43 had been on chronic methadone maintenance treatment; 45 were using illicit methadone and/or heroin. On day 1, all subjects were put on placebo methadone and told to take one .1mg clonidine tablet every 4 to 6 hours as needed; doses were increased daily to a maximum dose of .3 to 1.2mg daily. Of the methadone patients switched to clonidine, 72% were successfully detoxified and started naltrexone on day 10; illicit users showed a 53% success rate. Greatest difficulty was shown by patients using large amounts of heroin and those on more than 25 mg methadone. All patients recorded that clonidine reduced, but did not eliminate, withdrawal symptoms. Gradual decrements of clonidine dose avoided reemergence of withdrawal symptoms found with rapid decrements in clonidine dosage. 3 references.

000828 Welle, Stephen L.; Thompson, Dean A.; Campbell, Robert G.; Lilavivathana, Usah. Monroe Community Hospital, 435 East Henrietta Road, Rochester, NY 14603 **Increased hunger and thirst during glucoprivation in humans.** Physiology & Behavior. 25(3):397-403, 1980.

Increased hunger and thirst during glucoprivation in humans were investigated. Five male volunteers received two intravenous infusions of 2-deoxy-D-glucose (2DG) and one of normal saline. Hunger and thirst ratings, solid food and water intake, and plasma epinephrine and glucose levels were greater after both of the 2DG infusions than after the saline infusion. It is suggested that the increase in water intake caused by 2DG does not depend on elevated hunger, and that increased caloric intake

after 2DG infusions is not dependent on greater thirst. Behavioral and adrenomedullary response to both 2DG infusions were qualitatively and quantitatively the same, suggesting that there are no residual effects of 2DG that diminish the ability of Ss to respond to glucoprivation. Measurements of possible thirst stimuli revealed no clear mechanisms for the dipsogenic effect of 2DG. 40 references. (Author abstract modified)

15 TOXICOLOGY AND SIDE EFFECTS

000829 Adler, Lawrence E.; Sadja, Lee; Wilets, Gregory. Box C-268, Dept. of Psychiatry, University of Colorado Medical Center, 4200 E. 9th Avenue, Denver, CO 80262 **Cimetidine toxicity manifested as paranoia and hallucinations.** American Journal of Psychiatry. 137(9):1112-1113, 1980.

A CNS cimetidine toxicity occurring in a paranoid patient who experienced vivid hallucinations is described. Within 24 hours of initiation of cimetidine therapy the patient became belligerent and within 48 hours he began experiencing visual and auditory hallucinations that he said were like pornographic movies. The psychosis resolved within 36 hours of discontinuation of cimetidine and the patient received no further psychotropic medication. It is concluded that cimetidine toxicity can trigger a predominantly paranoid psychosis that must be differentiated from other functional or organic paranoid psychoses. It is suggested that physicians treating patients with cimetidine should be alert to prodromal personality changes, like the subject's sudden belligerence, as possible indications of impending psychosis. 2 references.

000830 Albrecht, J.; Kampf, D.; Muller-Oerlinghausen, B. Univesitatsklinikum Steglitz Neurochirurgische/Neurologische Klinik und Poliklinik, Hindenburgdamm 30, D-1000 Berlin 45, West Germany **Renal function and biopsy in patients on lithium-therapy.** Pharmakopsychiatrie Neuro-Psychopharmakologie. 13(4):228-234, 1980.

The renal function of 46 outpatients from a lithium clinic was examined during 5 days of hospitalization. Lithium medication was stopped 7 days before admission. In about 25% of the patients, a lithium-induced nephropathology was noted, and irreversibility of the disturbances could not be excluded. An exclusive reduction of renal concentrating ability occurred in this population, while urine osmolality showed a significant negative correlation to the product of duration of treatment times lithium serum concentration. In all Ss with a reduced glomerular filtration rate, a preexisting kidney disease was observed. On the average, it took 7 years until a reduced concentration ability became apparent while the minimal time interval was 3 years. The lithium associated nephropathy may be characterized as a frequently occurring damage of the kidney interstitium depending on serum lithium concentration and duration of treatment. Progress of these pathological changes was very slow and accompanied by few and mild clinical symptoms. 28 references. (Journal abstract modified)

000831 Allen, Marcia Divoll; Greenblatt, David J.; Lacasse, Yves; Shader, Richard I. Greenblatt: Div. of Clinical Pharmacology, Box 1007, New England Medical Center Hospital, 171 Harrison Ave., Boston, MA 02111 **Pharmacokinetic study of lorazepam overdosage.** American Journal of Psychiatry. 137(11):1414-1415, 1980.

Three patients are described who attempted to commit suicide by ingesting overdoses of lorazepam, an intermediate acting benzodiazepine that, unlike diazepam, has no active metabolites. Overdoses were estimated as 120 and 100mg in two cases, dosage was unknown in the third. All three patients were clinically well within 24 to 30 hr of ingestion, although high lorazepam concentrations persisted. Results of a psychopharmacokinetic study indicated that the half-life of lorazepam after extremely high doses have been ingested is approximately the same as that found after ingestion of usual therapeutic doses. 9 references. (Author abstract modified)

000832 Arnold, Edward S.; Rudd, Steven M.; Kirshner, Howard. Dept. of Psychiatry, Vanderbilt University Hospital, Nashville, TN 37232 **Manic psychosis following rapid withdrawal from baclofen.** American Journal of Psychiatry. 137(11):1466-1467, 1980.

The appearance of a manic psychosis in a 71-year-old male following rapid discontinuance of baclofen, 6 months after initiation of baclofen therapy, is reported. At admission, the patient presented with increased vocalization, motor activity, aggressiveness, sleeplessness, and decreased appetite, corresponding to DSM-III criteria for mania, although the episode terminated after 4 days' treatment with haloperidol and reinstitution of baclofen. Possible neurochemical mechanisms of this manic psychosis following baclofen withdrawal are considered. 9 references.

000833 Bollea, E.; Donini, G.; Piperno, R.; Zipparri, L. Clinica Psichiatrica II, Universita di Roma, Rome, Italy /**On the danger of using psychopharmaceuticals during pregnancy: critical review of the literature.**/ Sulla pericolosita degli psicofarmaci in gravidanza: rassegna critica della letteratura. Rivista Sperimentale di Freniatria. 103(3):543-585, 1979.

The danger of using psychopharmaceuticals during pregnancy is discussed. Based on animal experimentation in which teratogenic effects have been observed only in cases of very high doses or under exceptional experimental conditions, prudent use of pharmaceuticals during pregnancy is advised. The thalidomide tragedy emphasizes the need for caution until precise data from animal experimentation can be obtained. It is concluded that caution must be used in administering drugs, especially when they are new, synthetically produced agents and therefore of unproven safety and benefit for women in the first weeks of pregnancy. 197 references. (Journal abstract modified)

000834 Bourgeois, M.; Boueilh, P.; Tignol, J. Universite Bordeaux II, 121, rue de la Bechade, F-33076 Bordeaux, France / **Spontaneous dyskinesia in the elderly and tardive dyskinesia from neuroleptics. A survey of 270 elderly patients.**/ Dyskinesies spontanees seniles idiopathiques et dyskinesies tardives des neuroleptiques: enquete chez 270 vieillards. Encephale. 6(1):37-39, 1980.

Observations were made on spontaneous dyskinesia among 270 institutionalized elderly Ss. The incidence of the phenomenon are much more frequent than previously thought, and it was found that 23.3% of these nursing home resident exhibited a buccolinguo facial dyskinesia. The average age was 81.8 years. Frequency was twice as high among women (26.7%) as among men (15.2%) and 2.5 times greater if patients were given neuroleptics (42.4% versus 18%). Implications of the findings for drug administration procedures are discussed. 2 references. (Journal abstract modified)

000835 Brust, John C. M.; Hammer, Jeffrey S.; Challenor, Yasoma; Healton, Edward B.; Lesser, Ronald P. Harlem Hospital Center, 506 Lenox Ave., New York, NY 10037 **Acute generalized polyneuropathy accompanying lithium poisoning.** Annals of Neurology. 6(4):360-362, 1979.

A case study is reported of a woman with typical symptoms of lithium toxicity who also had severe generalized sensorimotor peripheral neuropathy which cleared completely as she recovered. Electrodiagnostic studies suggest axonal lesions. An autopsy 10 months later revealed no residual abnormalities. Previous studies have shown that lithium can affect peripheral nerve

function, but this is the first reported case of peripheral neuropathy in association with lithium toxicity. 22 references. (Author abstract)

000836 Carpenter, William T.; Rey, Alix C.; Stephens, Joseph H. Maryland Psychiatric Research Center, Baltimore, MD 21228 **Covert dyskinesia in ambulatory schizophrenia.** Lancet. No. 8187:212-213, 1980.

The prevalence of covert dyskinesia in 52 ambulatory schizophrenic patients was examined. The patients were rated on the abnormal involuntary movement disorder (AIMD), neurological rating, and adverse symptoms scales. Fourteen of the patients acquired an AIMD during the drug withdrawal period. Due to the difficulty in sustaining lengthy drug free periods among the patients, the assumption that emergent tardive dyskinesia (TD) would be reversible during a prolonged drug holiday was verified in was one patient. It is concluded that the true prevalence of TD in patients on neuroleptic drugs will be seriously underestimated unless the diagnosis is established during drug reduction or drug discontinuation. 14 references.

000837 Coppen, A.; Bishop, M. E.; Bailey, J. E.; Cattell, W. R.; Price, R. G. M. R. C. Neuropsychiatry Laboratory, West Park Hospital, Epsom, Surrey, England **Renal function in lithium and non-lithium treated patients with affective disorders.** Acta Psychiatrica Scandanavica. 62(4):343-355, 1980.

Renal function was examined in 101 patients maintained on sustained release lithium carbonate for periods ranging from 1 to 12.5 years. A control group of patients with affective disorders who had never been given lithium was also investigated as well as a control group of normal subjects of comparable age and sex. Creatinine clearance, serum creatinine, maximum urine osmolality after 1-Deamino-8-D-arginine vasopressin administration, urine and plasma beta2-microglobulin and the urinary excretion of N-acetyl-beta-glucosaminidase were not significantly different between patients on lithium and depressed patients never on lithium. Side-effects that have been related to lithium therapy were not correlated with duration of lithium therapy. It is concluded that there was little evidence of a serious renal functional impairment attributable to lithium therapy. 24 references. (Author abstract)

000838 Craig, Thomas J. 40 Woodbine Road, New City, NY 10956 **Medication use and deaths attributed to asphyxia among psychiatric patients.** American Journal of Psychiatry. 137(11):1366-1373, 1980.

The incidence of asphyxia deaths and the possible relation between death by asphyxia and use of medication were examined in a review of the charts of psychiatric inpatients who died between 1969 and 1977. Of the deaths, 49 could be attributed to asphyxia. Compared with a matched control group, 48 of the asphyxia patients represented three distinct pathological categories: 1) older patients with a history of serious illness, whose deaths appeared unrelated to psychotropic medication use (40%); 2) a group whose deaths were associated with seizures (31%), raising questions about subtherapeutic anticonvulsant levels in association with the use of psychotropic drugs; and 3) a group of patients who choked to death (29%). Choking has been theoretically linked to a combination of dopamine blockade plus strong anticholinergic effects leading to impairment of swallowing. The third category appears to have been virtually eliminated by the use of a drug monitoring system and the Heimlich maneuver. 39 references. (Author abstract modified)

000839 Crowder, Miles K.; Pate, J. Kirby. Dept. of Psychiatry, Vanderbilt University Medical Center, Nashville, TN 37232 **A case report of cimetidine-induced depressive syndrome.** American Journal of Psychiatry. 137(11):1451, 1980.

A case of depressive syndrome in a 48-year-old male, probably induced by the histamine H2 receptor antagonist cimetidine, is reported. The S was admitted with a chief complaint of depression, characterized by inability to work, suicidal ideation, hypersomnia, and feelings of sadness and worthlessness. He reported subjective symptoms of depression as having increased 7 months before admission, the approximate time of initiation of cimetidine therapy for peptic ulcer disease. Discontinuation of cimetidine resulted in dramatic improvement; reinitiation of cimetidine was associated with a return of depressive symptomatology. At subsequent discontinuation of medication, depressive symptoms quickly remitted. 10 references.

000840 Downing, Robert W.; Rickels, Karl. Rickels: 203 Piersol Building, Hospital of the University of Pennsylvania, 3400 Spruce Street, Philadelphia, PA 19104 **Hostility conflict and reporting of side effects by psychiatric outpatients.** Psychological Reports. 47(1):319-324, 1980.

The irritability, indirect hostility, verbal hostility, and resentment scales from the Buss-Durkee Hostility Inventory, along with a newly constructed scale intended as a self-report measure of hostility conflict, were administered to 84 nonpsychotic outpatients receiving an active anxiolytic and participating in one of several double-blind drug trials. Patients who complained of one or more side-effects after 2 wk treatment were classified as side reactors; the remaining patients, as nonside reactors. Compared to nonside reactors, the side reactors obtained higher hostility conflict scores and lower scores on the irritability and indirect hostility scales. Also the relationship between side-effect status and hostility conflict was stronger in those patients who obtained higher scores on the iritability, indirect hostility, and verbal hostility scales, and among patients obtaining lower scores on the resentment scale. Findings are regarded as providing partial replication and further verification of earlier results. 12 references. (Author abstract)

000841 Elizur, A.; Segal, S.; Yeret, A.; Ben-David, M. Shalvata Psychiatric Center, Hod Hasharon, Israel **Prolactin response and extrapyramidal side effects during propranolol and neuroleptic drugs treatment in chronic schizophrenic patients.** Israel Annals of Psychiatry and Related Disciplines. 17(4):318-327, 1979.

A comparison between the antipsychotic activity and antidopaminergic activity reflected by extrapyramidal side-effects and hyperprolactinemia was carried out on 23 chronic schizophrenic patients with acute exacerbation of symptoms, treated with propranolol, neuroleptic drugs, or a combination. Clinical evaluations by two psychiatrists independently and serum prolactin were measured once during the first week of placebo and at the end of the 6 week treatment period. Clinical improvement was found in half the patients in each group, with no differences between groups. However, significant difference was found between the propranolol and neuroleptic group in two of the criteria of antidopaminergic activity. All the patients treated with neuroleptic drugs or a combination of haloperidol and propranolol showed extrapyramidal side-effects, as well as a significant increase in serum prolactin levels. In this group, there was a significant positive linear correlation between dosage and prolactin levels. There were no such side-effects, nor was there an increase in serum prolactin levels in the propranolol group. No relationship was found between the serum prolactin levels and the dosage of propranolol. 15 references. (Author abstract)

000842 Gaillard-Sizaret, C.; Gaillard, Ph. Centre Hospitalier Specialise, 54, avenue de la Republique, F-94800 Villejuif, France /**Neuroleptic-induced tardive dyskinesia: recent pathophysiological data, therapeutic trials.**/ Les dyskinesies tardives induites par les neuroleptiques: donnees physiopathologiques actuelles tentatives therapeutiques. Therapie. 34(5):555-574, 1979.

Tardive dyskinesia is discussed in terms of its clinical characteristics, its relation to other extrapyramidal disorders, and its reported frequency in patients treated with neuroleptics. Biochemical hypotheses are reviewed in order to try to understand the pathophysiology. Tardive dyskinesias are thought to be related to increased responsiveness of dopamine receptor sites as a result of neuroleptic-induced denervation hypersensibility. Several trials of treatment are compared with respect to their sites of action. 97 references. (Journal abstract modified)

000843 Gammon, G. Davis; Docherty, John P. Yale Psychiatric Institute, Box 12A, Yale Station, New Haven, CT 06520 **Thiazide-induced hypercalcemia in a manic-depressive patient.** American Journal of Psychiatry. 137(11):1453-1455, 1980.

A case is reported of thiazide-induced hypercalcemia in a manic-depressive, 60-year-old male. The patient showed late onset bipolar affective illness, with an apparent genetic predisposition. Prior to admission, the patient had received 900mg/day lithium carbonate, 50mg/day hydrochlorothiazide, and 300mg/day hydralazine. Two calciums levels obtained 3 yrs previously, during the time when the patient was becoming lithium refractory, showed mildly abnormal calcium levels. Because of the potential role of thiazide therapy in aggravating the calcium metabolism disorder, propanolol was substituted. Coincident with restoration of normal calcium homeostasis, the patient recovered from a severe depressive episode and appeared to enter an interpolar period. He has been free of symptoms of manic-depressive illness since his discharge 2 yr ago. 8 references.

000844 Gardos, George; Cole, Jonathan O.; La Brie, Richard A. Institute for Research and Rehabilitation, Boston State Hospital, Boston, MA **Drug variables in the etiology of tardive dyskinesia: application of discriminant function analysis.** In: Fann, W., Tardive dyskinesia. New York, SP Medical and Scientific Books, 1980. 531 p. (p. 291-296).

Neuroleptic drug variables in the etiology of tardive dyskinesia in 50 chronic state hospital inpatients (mostly male chronic schizophrenics) are reported. To determine which variables best discriminate between dyskinetic and nondyskinetic groups, a stepwise discriminant analysis was conducted. Three drug variables (number of months on low potency neuroleptics, time since initial neuroleptic therapy began, and total amount of depot fluphenazine received), as well as two other variables (abnormal EEG and previous EST) were found to significantly predict membership in the dyskinesia group. Tentative conclusions drawn from these results are included. 15 references

000845 Gebhart, E. Inst. Hum.-Genet., Anthropol. Univ., Erlangen-Nuremberg, Germany **/On the genetic side-effects of psychotropic substances: I. Psychopharmaceuticals, narcotics, and anticonvulsant./** Zur Frage der erbgutschadigenden Nebenwirkungen von psychotropen Substanzen: I. Psychopharmaka, Narkotica, Antikonvulsiva. Fortschritte der Medizin. 97:45-48, 1979.

The genetic side-effects of psychotropic substances such as psychopharmaceuticals, narcotics, and anticonvulsants were studied. No uniform chromosome mutations caused by psychopharmaceuticals were found. There was also no uniform pattern with chlorpromazine and trifluprom azine. Perphemine was not found to contain any elements responsible for chromosome damage. Anticonvulsants, especially when used in combination with other drugs, caused chromosome damage. The results concerning diphenylhydantoine were mixed. Mysoline does cause genetic mutations. However, more research is necessary before further conclusions can be drawn. (Journal abstract modified)

000846 Gelenberg, Alan J. Dept. of Psychiatry, Harvard Medical School, Boston, MA 02115 **Tardive dyskinesia and lithium-associated nephropathy: are you liable?** Journal of Clinical Psychiatry. 41(11):368-369, 1980.

Issues of professional liability for psychiatrists who utilize toxic drugs in the treatment of mental disorders are addressed. Two types of chronic drug toxicity are emphasized: tardive dyskinesia and lithium associated nephropathy. Legal and ethical obligations in such cases require the psychiatrist to develop a treatment scheme to maximize the benefit/risk ratio for each patient, periodic reassessment of dosage, and frequent physical checkups. He must also take the patient into his confidence regarding the nature of therapy and should receive documented informed consent from the patient. 2 references.

000847 Ghadirian, A. M.; Lehmann, H. E. Allan Memorial Institute, 1025 Pine Ave. W., Montreal, Quebec H3A 1A1 Canada **Neurological side effects of lithium: organic brain syndrome, seizures, extrapyramidal side effects, and EEG changes.** Comprehensive Psychiatry. 21(5):327-335, 1980.

The neurological complications arising from lithium carbonate treatment of primary affective disorders and schizoaffective disorders are reviewed. For practical purposes such complications are divided into five groups: organic brain syndrome, extrapyramidal side-effects, seizures, other neurotoxicity (e.g., ataxia, dysarthria), and EEG abnormalities. A study is cited to show that while 36.8% of young adult psychiatric patients showed neurological abnormalities, no neurological impairment, whether diffuse or localized, was found among patients with affective disorders. It is suggested that one may anticipate a higher incidence of lithium-induced neurotoxicity in the treatment of psychiatric patients suffering from other than primary affective disorders. 51 references.

000848 Giannini, A. James; Mahar, Paul J. St. Elizabeth Hospital, Family Medicine Center, Youngstown, OH 44501 **An unusual ocular complication of thioridazine.** Inernational Journal of Psychiatry in Medicine. 10(3):217-220, 1980.

A unique case of thioridazine dependent discoloration of vision or chromatopsia is described. Unusual features include the particular tint of the discoloration, the relative rapidity of onset of this symptom, and the low dosage of thioridazine that was involved. 13 references. (Author abstract modified)

000849 Gualtieri, C. Thomas; Barnhill, Jarrett; McGimsey, Jim; Schell, Duke. Dept. of Psychiatry, University of North Carolina, North Carolina Memorial Hospital, Chapel Hill, NC 27514 **Tardive dyskinesia and other movement disorders in children treated with psychotropic drugs.** Journal of the American Academy of Child Psychiatry. 19(3):491-510, 1980.

The literature concerning tardive dyskinesia (TD), withdrawal dyskinesias, and acute pyramidal reactions in children and adolescents is reviewed. The clinical manifestations of TD in children may differ from those in adults. It is unlikely that TD is a single entity in adults or children. Clinical evidence supports the idea of a wide range of movement disorders. Children treated with neuroleptics are at-risk for TD. When neuroleptics are used in treatment of children, clinicians should be alive to the risk of TD and proceed with caution. Risk factors and differential diagnosis of TD in children are discussed, as are possible developmental implications. Six cases are described which demonstrate the broad range of dyskinesias that occur in children. 65 references. (Author abstract modified)

000850 Hemmingsen, R.; Rafaelsen, O. J. Dept. of Psychiatry, Rigshospitalet, 9 Bledgamsvej, DK-2100 Copenhagen, Denmark

Hypnagogic and hypnopompic hallucinations during amitriptyline treatment. Acta Psychiatrica Scandanavica. 62(4):364-368, 1980.

Four cases of hypnagogic or hypnopompic visual hallucinations in patients during amitriptyline treatment are reported. The hallucinations were clearly delineated, projected to the outer objective space and were for a short time experienced as real. The patients rapidly realized the unreality of the sights, probably because they regained the full criticism and coherent thinking of an unpsychotic awake individual. There may be a relation between the effects of amitriptyline in brain, the changed pattern of sleep, and the clinical recovery. It is suggested that patients be informed about the benign character of this type of hallucinatory phenomena so that treatment is not terminated at an undue time. 7 references. (Author abstract)

000851 Hoppener, R. J.; Kuyer, A.; Meijer, J. W. A.; Hulsman, J. Netherlands **Correlation between daily fluctuations of carbamazepine serum levels and intermittent side effects.** Epilepsia. 21(4):341-350, 1980.

The correlation between daily fluctuations of carbamazepine serum levels and intermittent side-effects are examined with 43 patients. There appeared to be a rapid resorption. Each patient showed a prominent increase in the serum level 2 hours after carbamazepine intake. In the course of the afternoon, a maximum was often reached that was attended by side-effects. After changing the scheme of intake in such a way that the serum levels did not exceed 8mg/liter, the side-effects disappeared. None of the patients show an increase of seizure frequency after this change. 34 references. (Author abstract modified)

000852 Hronek, J.; Kolomaznik, M. Psychiatricka klinika, Dukelska tr. 69, 301 33 Plzen, Czechoslovakia **/Drugs and sexual function./** Farmaka a sexualni funkce. Ceskoslovenska Psychiatrie. 76(1):3-7, 1980.

The need for physicians to consider possible adverse side-effects of prescription drugs on sexual function is addressed. It is contended that most medical practitioners are uninformed about many side-effects and that such information is known only to specialists dealing with the particular problem. Careful attention to known adverse reactions is therefore necessary and patients should be appropriately informed to avoid unneeded traumatization. A sexologist should be consulted in any serious disturbance. (Journal abstract modified)

000853 Ings, R. M. J. Hoechst Pharmaceutical Research Laboratories, Milton Keynes, England **The comparative disposition of nomifensine (merital) in the pregnant and non-pregnant rat.** Archives Internationales de Pharmacodynamie et de Therapie. 242(2):180-195, 1979.

The disposition of radioactivity from 14C-nomifensine was compared in pregnant and nonpregnant female rats by examining plasma profiles, the qualitative tissue distribution (whole body autoradiography) and the quantitative tissue distribution of radioactivity. The clearance of radioactivity of 14C-nomifensine from the plasma of pregnant and nonpregnant rats was similar and was complex with secondary peaks and plateaux after both oral and intravenous dosing. Whole body autoradiography also showed a very similar tissue distribution pattern of radioactivity between pregnant and nonpregnant rats with extensive distribution from blood into tissue. Only traces of radioactivity from 14C-nomifensine was seen to cross the placenta into the fetuses of 15 day pregnant rats and these rapidly cleared with time. Slightly higher amounts were seen to cross the fetuses of 18 day pregnant rats and radioactivity was seen in the fetal brain, heart, liver, and lung. Quantitative tissue distribution studies confirm these qualitative findings. 14 references. (Author abstract modified)

000854 Itoh, Hitoshi; Yagi, Gohei. Dept. of Neuropsychiatry, School of Medicine, Keio University, Tokyo, Japan **Reversibility of tardive dyskinesia.** Folia Psychiatrica et Neurologica Japonica. 33(1):43-54, 1979.

The reversibility of supposedly irreversible tardive dyskinesia (TD) was studied over a 5 year period (1971-1976) in 19 patients, ranging in age from 32 to 83 years old in 1976, following neuroleptic withdrawal. Duration of symptoms at time of the 1971 survey varied from several months ot 14 years. Of the patients, seven died, and eight received intermittent reinstatement of neuroleptic therapy. Various clinical courses following neuroleptic withdrawal were seen including amelioration, transient aggravation, and even persistence. But, thereafter, a gradual reduction in TD symptomatology was observed in a majority of patients in the younger group. Even among elder patients with severe long lasting persistent dyskinesia, symptoms were considerably improved after removal of neuroleptics. Three illustrative case studies are included. It is suggested that administration of certain neuroleptics only for the treatment of abnormal movements is not appropriate unless psychotic exacerbation requires reinstitution of such treatment. 28 references. (Author abstract modified)

000855 Jancar, J. Stoke Park Hospital, Stapleton, Bristol BS16 1QU, England **Anticonvulsant drugs and cancer.** Lancet. No. 8166:484, 1980.

In a letter to the editor, the relationship between anticonvulsant drugs and cancer is reported for Stoke Park Hospital, Bristol, England, from January 1956 to January 1980. No case of cancer of the liver was observed among epileptics, but one case of hepatoma and one case of carcinoma of the gallbladder occurred among the nonepileptic patients, neither having received any drugs. The incidence of cancer of the gastrointestinal tract is high, 59 cases, and appears to be still increasing, even allowing for the patients' prolonged lifespan. The next most frequently affected site was the breast but the incidence of cancer of respiratory system is low, four cases. Out of 120 Down syndrome patients who died only two had cancer. All the epileptics were on anticonvulsant drugs for many years. Similarly a number of patients were for many years receiving various tranquilizing drugs for superimposed psychotic illnesses and for severe behavior disorder. 3 references.

000856 Jo, Mamoru; Tachi, Nabutada; Shinoda, Minoru; Maejima, Seiji; Sakai, Tadashi. Yakumo-Byoin National Sanatorium, Hokkaido, Japan **Serum concentrations of phenobarbital and diphenylhydantoin in severe mentally and physically handicapped patients.** Iryo. 34(2):130-134, 1980.

The body weight of each of 114 severe mentally and physically handicapped patients was compared with normals in a study of the relationship between serum concentrations of phenobarbital and diphenylhydantoin and body weight. These patients were grouped according to body weights. Serum concentrations of phenobarbital were considerably lower in the three lowest body weight categories than in the highest and there was a significant correlation with dosage. Serum concentrations of diphenylhydantoin were lower in the lightest two groups. Since the side effects of anticonvulsants are difficult to notice and since few of the patients can complain of the symptoms, it is concluded that serum concentrations of anticonvulsants must be measured when the severely handicapped are treated with these drugs. 15 references. (Author abstract modified)

000857 Josephson, Allan M.; Mackenzie, Thomas B. Dept. of Psychiatry, Box 393, University of Minnesota Medical School, Mayo Medical Bldg., Minneapolis, MN 55455 **Thyroid-induced**

mania in hypothyroid patients. British Journal of Psychiatry. 137(September):222-228, 1980.

An organic affective syndrome, manic type, occurring shortly after initiation of thyroid replacement therapy in hypothyroid patients is described on the basis of a retrospective study of 18 case reports. The symptomatology and homogeneity of the syndrome offers insight into the relationship between thyroid activity and affective disturbance. The patients experiencing mania showed concurrent psychopathology at the time of replacement therapy, frequently had a past history of personal or familial psychiatric disorder, and were given dosages in the high range of normal. The potential morbidity of the manic state was considerable. These findings suggest that a group of hypothyroid patients at-risk can be identified. In such a group, lower initial dosages and gradual increases in dosage may be indicated. 25 references. (Author abstract)

000858 Kane, John; Struve, Frederic A.; Weinhold, Paul; Woerner, Margaret. Dept. of Psychiatry, Long Island Jewish-Hillside Medical Center, Glen Oaks, NY 11004 **Strategy for the study of patients at high risk for tardive dyskinesia.** American Journal of Psychiatry. 137(10):1265-1267, 1980.

Over a 3 year period, 99 consecutive case histories of patients with pesumptive tardive dyskinesia were examined to study a possible relationship between EEG abnormalities (particularly the B-mitten pattern) and high-risk or vulnerability to TD. Seven patients fitting the proposed risk criteria were identified: mean age for these patients was 33 years old, six were men, none met diagnostic criteria for schizophrenia, six received predominantly high potency neuroleptics, and four continued to demonstrate involuntary movements for at least 6 months following drug discontinuation. The only patient with no EEG abnormality had shown evidence of cognitive deterioration suggestive of some degree of CNS dysfunction; four of the remaining patients showed the B-mitten dysrhythmia. Results for this patient subgroup suggests that there are persistent dyskinesias which are not always tardive (i.e., occurring late in the course of treatment with neuroleptics). 10 references.

000859 Kaul, Balkrishena; Davidow, Bernard. Toxicology Division, New York City Dept. of Health Laboratories, 455 First Ave., New York, NY 10016 **Application of a radioimmunoassay screening test for detection and management of phencyclidine intoxication.** Journal of Clinical Pharmacology. 20(8-9):500-505, 1980.

A radioimmunoassay procedure was used to monitor patients suspected of phencyclidine (PCP) intoxication. Symptoms in 11 patients included violent, aggressive behavior with delusions, hallucinations, agitation, and other signs of toxic psychosis. In 5 patients, serum concentrations of PCP ranged from 0.5 to 40ng/ml. Patients were given ascorbic acid after collection of the initial urine specimen, and PCP was identified in the first or second postacidification specimen when the initial specimen gave negative or questionable results. 13 references. (Author abstract modified)

000860 Kawahara, Ryuzo; Hazama, Hidebumi; Miyakoda, Junichiro. Dept. of Neuro-Psychiatry, Tottori University School of Medicine, Yonago 683, Japan **A case of cardiovascular collapse during lithium carbonate therapy.** Kyushu Neuro-psychiatry. 25(1):5-10, 1979.

A case of cardiovascular collapse during lithium carbonate therapy is reported in a 67-year-old woman diagnosed as manic-depressive. The patient was medicated with lithium carbonate at a daily dose of 300 to 800mg since April 19, 1978. On June 29, 1978 she suddenly suffered cardiovascular collapse with bradycardia and hypotension. Plasma lithium value was 2.55 mEq/1 on the next day, although serum electrolytes were within the normal range. Electrocardiogram tracing revealed atrioventriculo junctional rhythm with the retrograde conduction and ST depression in the leads V5,6. A complete pacemaker was implanted in her chest on August 7, 1978, and a few days after electrocardiogram tracing revealed sinus rhythm. The cardiovascular collapse was improved completely; however, in a tracing done January 9, 1979, the T flattening in leads V4, 5, 6 continued. 15 references. (Author abstract modified)

000861 Kielczawa, Jadwiga; Rymaszewska, Grazyna. Klinika Psychiatrii AMG Filia, ul. Lomsynska 54, 85-863 Bydgoszcz, Poland **/Tardive dyskinesias (observations concerning three cases)./** Pozne dyskinezy (rozwazania na marginesie trzech przypadkow). Psychiatria Polska. 13(5):505-509, 1979.

Tardive dyskinesia in three cases of schizophrenia was studied. The study confirmed the assumption that late dyskinesias can appear some 10 months or 10 years from the time when the patient began to receive treatment by neuroleptics. It was found that different neuroleptics have different effects on the formation of tardive dyskinesias. Anticholinergic preparations proved to be ineffective. 30 references.

000862 Klawans, Harold L.; Goetz, Christopher G.; Perlik, Stuart. Dept. of Neurological Sciences, Rush-Presbyterian-St. Lukes Medical Center, 1725 West Harrison, Chicago, IL 60612 **Tardive dyskinesia: review and update.** American Journal of Psychiatry. 137(8):900-908, 1980.

Tardive dyskinesia, and extrapyramidal syndrome associated with the chronic administration of major neuroleptic agents, is reviewed. The pathogenesis of the disorder appears to relate to chronic striatal dopaminergic receptor site blockade; the pathophysiology of tardive dyskinesia appears to relate to the resultant denervation hypersensitivity. Agents that deplete the brain of dopamine are the mainstay of therapy for the condition. Cholinergic agents that potentially modulate the balance between dopamine and acetycholine in the striatum offer possible additional therapeutic options. Resumption of neuroleptic therapy is seen as treatment with the presumed pathogenic agent and is not recommended. 81 references. (Author abstract modified)

000863 Kopera, Hans. Institut fur experimentelle und klinische Pharmakologie der Universitat Graz, Universitatsplatz 4,A-8010 Graz, Austria **/Effects of antidepressive drugs upon the heart and circulation./** Herz- und Kreislaufwirkungen der Antidepressiva. Medizinische Klinik. 74(38):1339-1345, 1979.

Effects of antidepressive drugs upon the heart and circulation are discussed. Monoamino-oxydase, lithium salts, tricyclic compounds with different structures and/or effects are the predominant antidepressants in use today. A discussion of the variable effects of these drugs, relating to the heart and circulatory system, is presented and results indicate that antidepressive drugs may cause unwanted cardiovascular side-effects. It is not possible to determine which patients are at high risk; however, it appears that the elderly and patients with cardiovascular problems are most frequently subject to adverse side-effects. The cardiovascular may range from short-term symptoms to life endangering complications. It is noted that: 1) damage to the heart and circulatory function through excessive doses contributes to the danger of drug toxicity common to most antidepressant drugs; and toxicity of the different antidepressive drugs differs according to type. 55 references.

000864 Larochelle, Pierre; Hamet, Pavel; Enjalbert, Marc. Clinical Research Institute, 110 Pine Ave. West, Montreal Quebec H2W 1R7, Canada **Responses to tyramine and norepinephrine after imipramine and trazodone.** Clinical Pharmacology and Therapeutics. 26(1):24-30, 1979.

Cardiovascular responses were compared in six normal Ss given imipramine (25mg) or trazodone (50mg) three times a day for 1 week. Imipramine suppressed blood pressure responses to tyramine, but trazodone had no effect. Blood pressure responsiveness to norepinephrine was increased by imipramine and depressed by trazodone. Results indicate that trazodone, a nontricyclic antidepressant, does not alter tyramine uptake into noradrenergic neurons but decreases sensitivity to norepinephrine. 20 references. (Author abstract modified)

000865 Leger, J.-M.; Dumond, J.-J.; Garoux, R.; Lombertie, E.; Dumas, M. no address **/Psychiatric manifestations induced by dopamine precursors or dopamine agonists./** Manifestations psychiatriques induites par les precurseurs ou les agonistes de la dopamine. Annales Medico-Psychologiques. 137(9):899-908, 1979.

Psychiatric complications due to the prescription of L-dopa and bromocriptine are discussed. These drugs cause a hyperexcitability and a hypersensibility, usually seen at the beginning of the treatment and after 3 years. This hyperexcitability also causes dream disturbances and hallucinations. It is shown that the psychiatric alterations induced by these drugs can be controlled by the prescription of neuroleptics. Two case studies of this problem are presented and a discussion follows the main text. 48 references.

000866 Levenson, Alvin J.; Beard, Owen W.; Murphy, Marvin L. Dept. of Psychiatry, University of Texas Medical School, PO Box 20708, Houston, TX 77025 **Major tranquilizers and heart disease: to use or not to use.** Geriatrics. 35(10):55-57, 61, 1980.

Iatrogenic cardiovascular side-effects associated with the major tranquilizers are discussed, with emphasis on contraindications to their prescription in the elderly patient. Among cardiac effects found with this class of psychoactive drugs, particularly phenothiazines, are arrhythmias, ECG changes, orthostatic hypotension, and sudden death through aspiration and asphyxia. Guidelines for decisions to intiate or continue therapy are presented, as are absolute and relative contraindications. While the risk of severe cardiovascular side-effects is not great, it is nevertheless clinically significant. Indirect cardiac effects on electrolyte metabolism and centrally mediated pressor reflexes and alpha-adrenergic blocking effect may potentiate the toxic effect of certain cardioactive drugs, accounting for some of the cardiovascular side-effects noted above. 15 references.

000867 Linnoila, M.; Erwin, C. W.; Brendle, A.; Skinner, T.; Routledge, P. A. Dept. of Psychiatry, Duke University Medical Center, Box 3870, Durham, NC 27710 **Pharmacodynamics and pharmacokinetics of diazepam in an abuser.** Acta Pharmacalogica et Toxicologica. 47(1):75-77, 1980.

The pharmacodynamics of diazepam were studied in a 44-year-old male diazepam abuser with severe anxiety. Despite initially high plasma diazepam and N-desmethyldiazepam levels, the subject was anxious and did not appear inebriated. Tracking performacne was impaired throughout the experiment (22 days), and no tolerance to this effect was observed. However, tolerance did develop to the deleterious effects of diazepam on detection performance in continuous performance and visual vigilance tasks. 13 references.

000868 Lowry, Michael R.; Dunner, Frederick J. Dept. of Psychiatry, V.A. Medical Center, Salt Lake City, UT 84148 **Seizures during tricyclic therapy.** American Journal of Psychiatry. 137(11):1461-1462, 1980.

The incidence of seizures during treatment of depression with tricyclic antidepressants was examined in a review of 400 cases receiving imipramine or amitriptyline therapy. Of these, four had seizures during treatment. All four were taking amitriptyline; two were epileptic, and two were without personal history of convulsions or epilepsy but showed strong family histories of epilepsy and abnormal epileptiform EEGs. Results suggest that the overall incidence of seizures during tricyclic treatment is 1% and about .5% among nonepileptic patients. 9 references.

000869 Luchins, Daniel J.; Freed, William J.; Wyatt, Richard Jed. Lab. of Clinical Psychopharm., Div. of Special Mental Health Research, William A. White Bldg., St. Elizabeths Hosp., Washington, DC 20032 **The role of cholinergic supersensitivity in the medical symptoms associated with withdrawal of antipsychotic drugs.** American Journal of Psychiatry. 137(11):1395-1398, 1980.

A literature review and a series of animal studies were conducted to examine the role of cholinergic supersensitivity in the medical symptoms associated with withdrawal of neuroleptic drugs having strong anticholinergic activity. The literature review indicates that the medical symptoms of neuroleptic withdrawal occurred more frequently with those drugs having potent anticholinergic effects than with those having weak anticholinergic effects. When antiparkinsonian agents were not simultaneously withdrawn, there was a striking difference between these two categories of neuroleptics. Experiments with mice show that withdrawal of haloperidol, a neuroleptic with weak anticholinergic effects, produced subsensitivity (depression of locomotor activity and seizure thresholds) to the cholinergic effects of physostigmine. These findings support the theory that medical side-effects of neuroleptic withdrawal are due to rebound cholinergic hypersensitivity associated with the anticholinergic actions of these psychotropic drugs, rather than being related to their dopamine blocking activity. 24 references. (Author abstract modified)

000870 Mandel, Michel R.; Madsen, Joseph; Miller, Alexander L.; Baldessarini, Ross J. Baldessarini: Mailman Research Center/McLean Hospital, 115 Mill Street, Belmont, MA 02178 **Intoxication associated with lithium and ECT.** American Journal of Psychiatry. 137(9):1107-1109, 1980.

Two cases of persistent delirium following concurrent administration of electroconvulsive therapy (ECT) are described along with attempts to evaluate Li in laboratory rats given lithium and electroconvulsive shock. In both cases brief cessation was sufficient to clear the disorientation that seemed to be caused by the lithium and administration of lithium was resumed 10 days to 2 weeks after the last ECT, without negative effects. In the laboratory rats there were no significant increases in brain concentrations of Li or in the ratio of brain to blood levels after ECT. It is concluded that the occasional development of a persistent but reversible organic mental syndrome during the association of ECT with lithium therapy is not likely to be a consequence of markedly increased brain levels of Li. 7 references.

000871 Margolis, Robert; Popkin, Nancy. Ridgeview Institute, Smyrna, GA **Marijuana: a review of medical research with implications for adolescents.** Personnel and Guidance Journal. 59(1):7-14, 1980.

In the context of the increasing frequency of use of marihuana, particularly by adolescents, recent medical research on the possible adverse effects of moderate to heavy usage is reviewed. Research in the areas of tolerance and persistence, reproductive system, respiratory system, immune system, central nervous system, genetic and chromosomal effects, and behavioral effect are discussed. In all of these areas research is noted which indicates potential hazards for the marihuana user with particular hazards for the pregnant or nursing mother. It is suggested that therapists and counselors have a responsibility to provide accu-

rate reliable information about the dangers of marihuana use to their clients. 70 references. (Author abstract modified)

000872 Meinhold, Jane M.; West, Dennis P.; Gurwich, Ernest; Spunt, Avery; Koya, Dolar. Dept. of Pharmacy Practice, University of Illinois College of Pharmacy, PO Box 6998, Chicago, IL 60680 **Cutaneous reaction to lithium carbonate: a case report.** Journal of Clinical Psychiatry. 41(11):395-396, 1980.

A case of diffuse erythematous, pruritic, maculopapular eruption which occurred on a limited identical body surface with each administration of two different brands of lithium carbonate is reported. Clinicians should be aware of the possibility of this type of eruption occurring when prescribing litium carbonate to patients. 9 references. (Author abstract modified)

000873 Mesdjian, E.; Dravet, C.; Cenraud, B.; Roger, J. Roger: Centre St.-Paul, 300 Boulevard de Sainte Marguerite, F-13009 Marseille Cedex 2, France **Carbamazepine intoxication due to triacetyloleandomycin administration in epileptic patients.** Epilepsia. 21(5):489-496, 1980.

An unexpected acute intoxication (drowsiness, nausea, vomiting, dizziness) found following administration of triacetyloleandomycin (Tri A) is reported in 17 epileptic patients receiving carbamazepine (CBZ) alone or in combination with other anticonvulsant drugs. Similar symptoms occurred again in three patients after Tri A was administered a second time. The same toxic manifestations were observed in two patients receiving CBZ and erythromycin. A rapid increase in plasma levels of CBZ occurred after institution of Tri A therapy in six patients, the CBZ levels returning quickly to normal after withdrawal of Tri A. Thus, it is suggested that the observed intoxication is due to the simultaneous administration of CBZ and Tri A (or erythromycin). The possible role of hepatic dysfunction in this syndrome of intoxication is discussed. Furthermore, the intoxication may be at least partially related to serum electrolyte disturbances, as suggested by one case in which obvious signs of water intoxication were detected. The severity and frequency of intoxication should lead to proscribing Tri A or other macrolide antibiotics in patients receiving CBZ. 28 references. (Author abstract)

000874 Nathan, R. Swami; Asnis, Gregory M.; Dyrenfurth, Inge; Halpern, Frieda S.; Halbreich, Uriel; Ostrow, Lynn C.; Sachar, Edward J. Dept. of Psychiatry, College of Physicians and Surgeons of Columbia University, New York, NY 10032 **Plasma prolactin and testosterone during penfluridol treatment.** Lancet. No. 8185:94, 1980.

The effect of penfluridol on plasma testosterone and the relation to increased prolactin levels was investigated in seven chronic male schizophrenic patients and reported in a letter to the editor. During the drug free period, plasma prolactin and testosterone levels were both normal. Prolactin rose significantly during weeks 1 and 6 of penfluridol treatment. However, testosterone values did not alter significantly. There were no correlations between individual changes in prolactin and testosterone concentrations from the drug free period to week 1 or from the drug free period to week 6. None of the patients complained of any sexual difficulties. The study does not confirm the hypothesis that prolactin stimulates testosterone secretion in men. 7 references.

000875 no author. Task Force on Late Neurological Effects of Antipsychotic Drugs, Publications Sales Dept., American Psychiatric Association, 1700 18th Street, N.W., Washington, DC 20009 **Tardive dyskinesia: summary of a task force report of the American Psychiatric Association.** American Journal of Psychiatry. 137(10):1163-1172, 1980.

A summary of the report of the American Psychiatric Association's Task Force on Late Neurological Effects of Antipsychotic Drugs is presented. Abnormal movements associated with the prolonged use of antipsychotic drugs, tardive dyskinesias (TD) occurs in at least 10% to 20% of the patients at-risk; prevalence is higher among the elderly. The cause is unknown, but increased sensitivity to dopamine in the basal ganglia may contribute to the pathophysiology. Many treatments have been evaluated, but none is satisfactory. While the problem is serious, an alarmist view is unwarranted, especially since many cases are detected early and improve spontaneously. The best approach currently is to use antipsychotic drugs thoughtfully for clear indications, the best supported of which, scientifically, is chronic schizophrenia. There is a search for new agents with much less adverse neurologic effect, but with adequate antipsychotic efficacy. Appendices are provided dealing with differential diagnosis of TD, differential pharmacology of TD, and guidelines for prevention and management of TD. 64 references. (Author abstract modified)

000876 Oxman, Thomas E.; Silberfarb, Peter M. Silberfarb: Dept. of Psychiatry, Dartmouth Medical School, Hanover, NH 03755 **Serial cognitive testing in cancer patients receiving chemotherapy.** American Journal of Psychiatry. 137(10):1263-1265, 1980.

In an attempt to replicate previous findings of mild cognitive impairment, while controlling for such variables as previous impairment and possible confounding effects of concurrent brain irradiation, 10 oncology patients were administered a number of Wechsler and Halstead-Reitan subtests prior to and after chemotherapy. Eight of the patients were receiving doxarubicin in combination with other drugs, and eight received haloperidol or perphenazine before and during chemotherapy as an antiemetic. Test results for all patients before chemotherapy were within norms expected for age and education, confirming the absence of significant cognitive impairment. No significant differences on any of the subtests were found prior to or 24 hours or 1 month after chemotherapy. These results were in agreement with clinical observations. Results suggest that factors other than chemotherapy are important in the cognitive impairment found in cancer patients. 10 references.

000877 Pelicier, Y. no address **/Use and abuse of benzodiazepines./** Us et abus des benzodiazepines. Annales Medico-Psychologiques. 137(10):1033-1036, 1979.

The dangers of alcohol addiction caused by abusive use of benzodiazepines are discussed. It is noted that anxiolytics are an excellent form of medicine, but physicians should be alerted about their abuse and the need to control their use. Pharmacomania can easily become toxicomania. A brief discussion of borderline toxicomania follows the main text. 2 references.

000878 Pesando, P.; Nuzzi, G.; Maraini, G. Institute of Ophthalmology, II Cattedra di Clinica Oculistica, University of Parma, I-43100 Parma, Italy **Bilateral papilloedema in long term therapy with lithium carbonate.** Pharmakopsychiatrie Neuro-Psychopharmakologie. 13(4):235-239, 1980.

The developed bilateral papilloedema in 31-year-old White woman on lithium carbonate therapy for 5 years because of manic-depressive illness is discussed. Edema of the optic disc disappeared after lithium administration was discontinued. The appearance of bilateral papilloedema should be considered as an infrequent, but definite possibility of an ocular side-effect in long-term lithium therapy. 4 references. (Journal abstract modified)

000879 Pishkin, Vladimir; Lovallo, William R.; Fishkin, Steven M.; Shurley, Jay T. VA Medical Center (151A), 921 N.E. 13th

Street, Oklahoma City, OK 73104 **Residual effects of temazepam and other hypnotic compounds on cognitive function.** Journal of Clinical Psychiatry. 41(10):358-363, 1980.

The morning after effects of taking single doses of three hypnotic compounds were compared in a five group design, including the three drug conditions (temazepam, flurazepam, barbiturate), placebo, and noncapsule controls. Results show a slight superiority for temazepam over barbiturate on visual motor and reaction time tasks. On one phase of a cognitive task, the barbiturate and flurazepam group made more errors than the control groups. Overall, the results indicate an impairment in performance for the group taking barbiturate and a smaller impairment for the flurazepam group. No detectable impairment occurred for Ss taking temazepam. 13 references. (Author abstract)

000880 Polizos, Polizoes; Engelhardt, David M. Dept. of Psychiatry, Downstate Medical Center, Brooklyn, NY **Dyskinetic and neurological complications in children treated with psychotropic medications.** In: Fann, W., Tardive dyskinesia. New York, SP Medical and Scientific Books, 1980. 531 p. (p. 193-199).

Neurological complications occurring in children receiving neuroleptics are reported as observed in the first 16 weeks of treatment. Data are included on the incidence of disturbances of the sensorium and sensory organs, motor system effects, and convulsive disorders. The Ss were 6 to 12-year-olds diagnosed as having childhood schizophrenia with austistic features. The most common presenting symptoms were hyperactivity, severe stereotyped activity, labile and inappropriate affect, mood disturbances, severe disturbances of language development and communication, severe impairment of cognitive functioning, and sleep disturbances. The findings indicate that the neuroleptic complications are similar to those in adults but that their incidence is lower. Tardive dyskinesia is rare, but postwithdrawal dyskinetic syndrome is very frequent. Dyskinetic phenomena in children have a good prognosis and do not appear to be a serious side-effect of neuroleptic treatment. 7 references.

000881 Rao, A. Venkoba; Hariharasubramanian, N. Dept. of Psychiatry, Madurai Medical College, Madurai, India **Electrocardiographic changes during lithium treatment.** Indian Journal of Psychiatry. 22(2):135-141, 1980.

Electrocardiographic (ECG) changes were monitored in 30 psychiatric patients attending a lithium maintenance therapy clinic in Madurai, India. Ss ranged in age from 21 to 57 years old, had received lithium carbonate in oral doses ranging from 900 to 1500mg for periods varying from 1 to 43 months, and showed serum lithium concentrations within .8 to 1.2mEq/L. Comparison of pretreatment ECGs with those at the time of study indicated changes in 20 of the 30 Ss. Findings indicated that lithium tended to produce slowing of sinus rhythm, prolongation of intraventricular conduction, and interference with repolarization. A greater incidence of such changes was observed among older Ss and those receiving lithium for a greater time. The occurrence of significant ECG changes during long-term therapy and with no obvious ionic disturbances and while patients are asymptomatic suggests the need for ECG monitoring of patients on lithium. 51 references.

000882 Reed, Kenneth; Smith, Robert C.; Schoolar, Joseph C.; Hu, Richard; Leelavathi, Doddamane E.; Mann, Edward; Lippman, Lois. Smith: Biological Psychiatry, Texas Research Institute of Mental Sciences, 1300 Moursund, Texas Medical Center, Houston, TX 77030 **Cardiovascular effects of nortriptyline in geriatric patients.** American Journal of Psychiatry. 137(8):986-989, 1980.

To assess the clinical importance of cardiac side-effects of antidepressant medication in the elderly, a controlled study was conducted on the effects of standard doses of the tricyclic antidepressant nortriptyline in geriatric and nongeriatric depressed patients. At plasma levels of nortriptyline within or slightly above the previously established therapeutic window for nortriptyline, the drug had no clinically significant effects on the electrocardiograms of geriatric patients. Although some of the geriatric patients had statistically significant increases in heartrate, no patient's mean heartrate increased to levels above 100 beats per minute, none experienced clinically significant tachycardia, and the maximum increase in mean QTc was 32 milliseconds. Even when patients who had evidence of clinically significant preexisting cardiac disease were treated with standard doses of nortriptyline no evidence of increased cardiovascular toxicity was produced. When orthostatic hypotension results were combined across age groups, nortriptyline did increase the drop in the systolic component or orthostatic hypotension but not in the diastolic component. Results are compared with those from previous studies. 10 references.

000883 Rektor, L.; Horka, E. Psychiatricka lecebna, Huskova 2, 618 00 Brno, Czechoslovakia /**Neurotoxicity of lithium. II.**/ Neurotoxicita lithia. II. Ceskoslovenska Psychiatrie. 76(1):8-15, 1980.

Neurological complications of lithium treatment are examined and results of research are reported. Such complications include neuromuscular disorders, focal neurological symptoms, organic psychological syndromes, and may be precipitated by a simultaneous or immediately preceding prescription of neuroleptic or thymoleptic drugs. Data obtained in treating 290 patients over a 10 year period revealed 14 cases of neurotoxicity, and therapy had to be discontinued in eight cases due to the gravity of the reaction. In one case a course of tricyclic antidepressive (imipramine) treatment was discontinued, while lithium was contained. In five cases, lithium prophylaxis could be continued after the dosage was reduced. It is concluded that adverse reactions are reversible, provided that the lithium serum levels and the patient's overall condition are carefully monitored. 32 references. (Journal abstract modified)

000884 Rudorfer, Matthew V.; Young, Robert C. Young: New York Hospital, Westchester Division, 21 Bloomingdale Rd., White Plains, NY 10605 **Desipramine: cardiovascular effects and plasma levels.** American Journal of Psychiatry. 137(8):984-986, 1980.

The changes in several cardiovascular parameters were quantitated by examining a group of clinic patients without heart disease who were being treated with desipramine; the association between these changes and steady-state plasma levels was studied. Desipramine treatment resulted in statistically significant increases in pulse rate and QRS intervals, but not in the corrected QT interval. Desipramine treatment produced statistically significant increases in the electrocardiogram rate up to 115 beats per minute. The treatment was also associated with consistent but small decreases in systolic blood pressure in both the standing and sitting positions. Consistent prolongation of intracardiac conduction is reported in young, physically healthy subjects treated with desipramine. 10 references.

000885 Rybakowski, Janusz; Jaracz, Jan; Lis, Beata; Milewska, Grazyna; Lezanska, Miroslawa. Katedra i Klinika Psychiatrii AM, ul. Szpitalna 27/33, 60-572, Poznan, Poland /**The occurrence of tardive extrapyramidal symptoms in schizophrenic patients undergoing prolonged neuroleptic treatment.**/ Badanie wystepowania poznych objawow pozapiramidowych u chorych ze schizofrenia przewlekle leczonych srodkami neuroleptycznymi. Psychiatria Polska. 13(5):479-485, 1979.

The incidence of tardive extrapyramidal symptoms was investigated in 174 schizophrenics undergoing neuroleptic treatment. Data from the Rockland Research Institute evaluation scale indicates that the symptoms occurred in 33% of 105 Ss on sheltered wards of a psychiatric hospital. Similar symptoms were found in 15% of 69 patients hospitalized on subdistrict wards. The possible relationship between occurrence of the symptoms and such factors as sex, age, length of hospital stay, length and kind of neuroleptic treatment, and use of antiparkinsonian drugs was analyzed. The importance of this problem in the process of treating and rehabilitating schizophrenic patients is discussed. 5 references. (Journal abstract modified)

000886 Sholomskas, Alan J. Yale University School of Medicine, New Haven, CT 06510 **An old side effect revisited: visual hallucinations.** Psychiatric Annals. 10(11):47, 51-52, 55, 58-59, 1980.

The implications of the side-effects of visual hallucinations and their association with tricyclics are explored. Visual hallucinations are considered not necessarily indicative of a drug-induced delirium or psychotic reaction and should not be confused with them. It would be a mistake, for example, to diagnose the condition as a psychotic reaction and treat it with an antipsychotic drug when the appropriate treatment is to either reduce the drug, give more of the drug during the day and less at night, or switch to another drug. Nor is it necessarily contraindicated to use the same drug again. Because the side-effect occurs in a clear sensorium and is ego alien to the patient, the clinician must be careful to explain it and reassure the patient. Because patients may hesitate to report hallucinations, the physician may need to maintain an index of suspicion or awareness of the possibility. It is hoped that generally whenever psychotropic drugs are used, physicians will maintain a vigilance for the uncommon as well as common side-effects to both enhance diagnostic precision and to spare patients further suffering. 14 references.

000887 Stahl, Stephen M. Child Psychiatry Research Program, Dept. of Psychiatry and Behav. Sciences, Stanford Univ. Medical Center, Stanford, CA 94305 **Tardive Tourette syndrome in an autistic patient after long-term neuroleptic administration.** American Journal of Psychiatry. 137(10):1267-1269, 1980.

A case of a residual autistic adult male who manifested an onset of Tourette syndrome after long-term neuroleptic administration is reported. The patient presented with uncontrollable motor and vocal tics that had lasted 2 years. During childhood he showed bizarre behavior, functional mental retardation, and delayed language skills. At age 13, he entered a state hospital where he received 200mg/day chlorpromazine or thioridazine over the next 13 years. Following the patient's return to the parental home and discontinuation of medication he developed facial tics, grunting, involuntary limb movements, barking, and occasiional whispered coprophilia. The disorder persisted, was nonprogressive, and was exacerbated by agitation/stress and relieved by sedation. Similarities between this tardive form of Tourette syndrome and tardive dyskinesia are noted and implications are discussed. 9 references.

000888 Starmark, J.-E.; Forsman, A.; Wahlstrom, J. Out-patient Unit of Psychiatry, Ostra Hospital, Gothenburg, Sweden **Abscesses following prolonged intramuscular administration of perphenazine enantate.** Psychiatrica Scandinavica. 62(2):154-157, 1980.

Four cases of intramuscular abscesses following prolonged administration of perhenazine enantate, a long-acting neuroleptic in a vegetable oil base (sesame oil), are described. The drug was administered in large doses every 1 to 4 weeks. Based on observations, it is suggested that the risk of such a complication could be minimized by limiting the frequency of administraton to once a fortnight, by limiting the dose injected, by frequent variation of the site of injection, and by regular use of a disinfectant. 1 reference. (Author abstract modified)

000889 Stewart, Ronald B.; Salem, Ronald B.; Springer, Philip K. Dept. of Clinical Pharmacy, College of Pharmacy, University of Florida, Gainesville, FL 32610 **A case report of lorazepam withdrawal.** American Journal of Psychiatry. 137(9):1113-1114, 1980.

A 51-year-old woman who experienced an apparent withdrawal reaction after ingesting large doses of lorazepam is described. The patient was admitted to an inpatient psychiatric facility 4 months after her prescription was changed to lorazepam from diazepam. Within 18 months she complained of nausea and within 48 hours was disoriented and rigid. The symptoms passed after the fourth day and a history of abuse of lorazepam was confirmed. It is concluded that the newer, short acting benzodiazepines also have dependence and withdrawal potential. 5 references.

000890 Svendsen, O.; Dencker, S. J.; Fog, R.; Gravem, A. O.; Kristjansen, P. Dept. of Pharmacology and Toxicology, H. Lundbeck & Co., A/S, Ottiliavej 7-9, DK-2500 Valby, Denmark **Microscopic evidence of lymphogenic absorption of oil in humans receiving neuroleptic oily depot preparations intramuscularly.** Acta Pharmacologica et Toxicologica. 47(2):157-158, 1980.

Tissues were obtained at autopsy from eight schizophrenic patients who had been treated intramuscularly with neuroleptic oily depot preparations. Microscopic examination of the lymph nodes showed that the oily vehicle in neuroleptic depot preparations could be absorbed lymphogenically as liquid oil. Pulmonary oil microembolisms could also be seen in patients treated with large doses of oily neuroleptic depot preparations. 6 references.

000891 Van Putten, Theodore; May, Philip R. A.; Wilkins, Jeffery N. V.A. Medical Center, Brentwood, Wilshire, and Sawtelle Boulevards, Los Angeles, CA 90073 **Importance of akinesia: plasma chlorpromazine and prolactin levels.** American Journal of Psychiatry. 137(11):1446-1448, 1980.

In an attempt to develop a measure that could discriminate between akinesia and the negative symptoms of schizophrenia or the psychomotor retardation of depression, plasma levels of chlorpromazine and prolactin were investigated in 43 schizophrenic inpatients. No relationships between plasma and saliva chlorpromazine levels or prolactin levels and akinesia were found. The fact that all of the akinetic, but only 31% of the nonakinetic, patients rated themselves as drowsy 12 hr after their bedtime dose indicates that drowsiness is a fairly accurate correlate of akinesia. The implications of akinesia, a common extrapyramidal side-effect of antipsychotic drugs, for the emotional and social functioning of schizophrenics on maintenance therapy is discussed. 13 references. (Author abstract modified)

000892 Versiani, Marcio. Av. N. S. Copacabana, 1.133 conj. 1.303, 22070 Rio de Janeiro, Brazil /**Therapeutics V -- the unwanted effects of antipsychotics.**/ Terapeutica V -- os efeitos idesejaveis dos antipsicoticos. Jornal Brasileiro de Psiquiatria. 29(4):227-234, 1980.

The undesirable effects produced by antipsychotic drugs are discussed. Galactorrhea, gynecomastia and amenorrhea can be controlled by drug substitution. Pigment changes are detected with an ophthalmologic exam. Hypertension occurs with chlorpromazine and levopromazine. Autonomic effects mimic anticholinergic actions. Extrapyramidal effects comprise three syn-

dromes. Parkinson's disease appears at the beginning of treatment, is dose dependent, and may be controlled with anticholinergics. Akathisia is controlled with dose reduction. Tardive dyskinesia appears after years of treatment, can be irreversible and does not respond to therapeutic measures. These effects can be avoided by: using the drugs for the shortest amount of time possible, using antipsychotics with anticholinergics only when necessary, and suspending antipsychotics at regular intervals when dyskinesia is detected. 4 references. (Journal abstract modified)

000893 Vestergaard, P.; Amdisen, A.; Schou, M. Psychopharmacology Research Unit, Psychiatric Hospital, 8240 Risskov, Denmark **Clinically significant side effects of lithium treatment.** Acta Psychiatrica Scandinavica. 62(3):193-200, 1980.

A group of 237 patients in long-term lithium treatment were questioned specifically about five side-effects commonly associated with the treatment and unspecifically about other complaints. One-tenth of the Ss had no side-effects, two-thirds had one or two complaints, and one-fourth had three or more. About one-half complained of hand tremor, two-thirds of increased thirst, one-fifth of weight gain exceeding 10 kg, one-fifth of diarrhea, and one-tenth of edema of legs or face. Men complained of tremor more than women. Diarrhea was significantly less frequent in patients being additionally treated with antidepressants. Weight gain was associated with increased thirst and fluid output and with significantly increased blood pressure. None of the other variables distinguished between patients with and without the various complaints. It is nevertheless hypothesized that a moderate reduction of the serum lithium level may lead to a lowering of the frequency of some side-effects. 12 references. (Author abstract modified)

000894 Weddington, William W., Jr.; Marks, Robert C.; Verghese, J. Peter. Box 411, University of Chicago, 950 East 59th Street, Chicago, IL 60637 **Disulfiram encephalopathy as a cause of the catatonia syndrome.** American Journal of Psychiatry. 137(10):1217-1219, 1980.

A case of catatonia syndrome is reported in a 25-year-old male maintained on a 250mg/day dose of disulfiram during inpatient alcohol treatment and after discharge. Approximately 2 months after initiation of disulfiram, the patient manifested a marked change in behavior characteristized by withdrawal, headache, dizziness, and complaints of diminishing memory. Dysphoria was followed by rapid changes in sensorium and behavior and disulfiram was stopped. Following this the patient became intermittently withdrawn and agitated; 10 days after discontinuation of medication, the patient exhibited signs of catatonia which persisted for 1 week and then gradually resolved over a further 2 weeks. Although useful in the management of chronic alcoholism, disulfiram is being increasingly associated with a broad spectrum of side-effects and untoward medical sequelae, including catatonia. Careful monitoring of patients, particularly during early treatment and in cases with a history of familial psychiatric illness is advised. 27 references. (Author abstract modified)

000895 Weiner, Richard D.; Whanger, Alan D.; Erwin, C. William; Wilson, William P. Durham V.A. Medical Center, 508 Fulton Street, Durham, NC 27705 **Prolonged confusional state and EEG seizure activity following concurrent ECT and lithium use.** American Journal of Psychiatry. 137(11):1452-1453, 1980.

A case is reported of confusional state and EEG seizure activity following concurrent electroconvulsive therapy (ECT) and lithium treatment. The patient was a 33-year-old woman with a 14 yr history of intermittent psychotic depression, rapidly fluctuating mood, occasional auditory hallucinations, and several suicide attempts. Because of the patient's severe level of psychotic and suicidal ideation, a course of bifrontotemporal ECT treatments, three times daily, was used in conjunction with 60mg/day lithium, begun after the fifth ECT treatment. At the time of initiation of lithium therapy, the patient's symptoms had been largely relieved, only mild confusion and memory impairment were noted. Approximately 6 hr after the second lithium dose, the patient's confusion increased and she became disoriented and was at times unresponsive to questioning. Lithium was discontinued after the fourth dose, but behavioral changes persisted and EEG indicated seizure activity 2 days later. A slow return to pretreatment EEG activity was found by 9 weeks, following the fifth and final ECT session. Lithium was reinstituted 6 weeks after completion of sessions with no apparent complications. 10 references.

000896 Yudofsky, Stuart C.; Ahern, Geary; Brockman, Richard. New York State Psychiatric Institute, 722 West 168th Street, New York, NY 10032 **Agitation, disorientation, and hallucinations in patients on cimetidine: a report of three cases and literature review.** General Hospital Psychiatry. 2(3):233-236, 1980.

Three case reports are presented of patients with prominent psychosis, agitation, and disorientation related to cimetidine. Cimetidine, the first of a new class of pharmacologic agents that dramatically inhibit basal gastric acid secretion, is achieving widespread use for the treatment of such acid peptic disorders as duodenal ulcers, gastritis, and reflux esophagitis. A review of the literature reveals that central nervous system side-effects of cimetidine can occur within 24 hours of treatment with the drug; are often unrecognized or misdiagnosed by clinicians, and are reversed within 12 to 48 hours after the discontinuation of the medicine. Reports suggest that patients who receive high doses of the medication, or patients with renal or central nervous system impairments have increased susceptibility to the side-effects. 12 references. (Author abstract modified)

16 METHODS DEVELOPMENT

000897 Bertilsson, Leif; Braithwaite, Robin; Tybring, Gunnel; Garle, Mats; Borga, Olof. Dept. of Clinical Pharmacology, Huddinge Hospital, S-141 86 Huddinge, Sweden **Techniques for plasma protein binding of demethylchlorimipramine.** Clinical Pharmacology and Therapeutics. 26(2):265-271, 1979.

Cerebrospinal fluid (CSF) and plasma levels of demethylchlorimipramine (DMCI) were determined during treatment of depression or obsessive-compulsive disorders with chlorimipramine. In 18 patients, the mean CSF/plasma ratio for DMCI was 2.6%, with fourfold variation. Levels of CSF and plasma at steady-state were closely correlated. With equilibrium dialysis for the determination of protein binding of DMCI, a much larger free fraction was found in patients and normal Ss; part of the plasma binding capacity was lost during incubation. Results obtained by ultrafiltration were closer to those obtained in vivo, but part of the drug was absorbed on the ultrafiltration dialysis membrane. 15 references. (Author abstract modified)

000898 Dixon, Ross; Crews, Theodore; Mohacsi, Erno; Inturrisi, Charles; Foley, Kathleen. Cornell University Medical College, New York, NY 10021 **Levorphanol: radioimmunoassay and plasma concentration profiles in dog and man.** Research Communications in Chemical Pathology and Pharmacology. 29(3):535-547, 1980.

A specific radioimmunoassay for the determination of levorphanol in plasma was developed and tested in dogs and in cancer patients. The method employs a rabbit antiserum to an albumin conjugate of (-)-3-hydroxy-N-carboxymethylmorphinan. The method has a limit of sensitivity of about 0.5ng/ml of levorphanol using a 0.1ml plasma sample. Determinations in dogs treated intravenously or orally with levorphanol suggested ex-

tensive first pass metabolism of the drug. 14 references. (Author abstract modified)

000899 Gold, Mark S.; Pottash, A. L. C.; Extein, Irl; Sweeney, Donald R. Research Facilities, Fair Oaks Hospital, Summit, NJ **Dexamethasone suppression tests in depression and response to treatment.** Lancet. No. 8179:1190, 1980.

The use of dexamethasone suppression testing (DST) in the assessment of psychopharmacological treatment of depression is discussed in a letter to the editor. Following a brief methodological critique of Goldberg's (1980) report of the use of the DST in determining the safety of terminating tricyclic therapy, results of a DST study of six male unipolar depressive inpatients are reported. Ss were medication free for at least 1 week prior to diurnal cortisol testing and 10 days before DST. DST was done prior to and following treatment with electroconvulsive therapy (ECT, at least six treatments). Posttreatment Hamilton ratings and DST results both indicated significant improvement, supporting the hypothesis that abnormal DST is a biological marker for active primary affective disease and suggesting that return to a normal DST pattern is accompanied by clinical recovery. Implications for ECT and psychopharmacological treatment decision-making are discussed. 3 references.

000900 Green, Albert L.; El Hait, Mayyada A. S. Dept. of Biochemistry, University of Strathclyde, Todd Centre, 31 Taylor Street, Glasgow G4 ONR, Scotland **A new approach to the assessment of the potency of reversible monoamine oxidase inhibitors in vivo, and its application to ()-amphetamine, p-methoxyamphetamine and harmaline.** Biochemical Pharmacology. 29(20):2781-2789, 1980.

A new kinetic formulation for the interaction between reversible and irreversible enzyme inhibitors was used as the basis for determining enzyme active center occupancy by reversible enzyme inhibitors in vivo. This formulation was validated in vitro by comparing the monoamine oxidase active center occupancy by ()-amphetamine calculated from its ability to reduce inhibition by phenelzine with that calculated from its direct inhibitory action on the enzyme. From studies on the protection afforded against inhibition of mouse brain monoamine oxidase by phenelzine in vivo, I50 values of .5, 0.05, and 0.01mg/kg have been obtained for the inhibition of this enzyme by ()-amphetamine, p-methoxyamphetamine and harmaline. The protection afforded by amphetamine and p-methoxyamphetamine against inhibition by pheniprazine, clorgyline, and tranylcypromine also was studied. 28 references. (Author abstract modified)

000901 Hoffman, Brian B.; Lefkowitz, Robert J. Howard Hughes Medical Institute Laboratory, Duke University Medical Center, Durham, NC **Peripheral alpha-adrenergic receptor subtypes.** Psychoharmacology Bulletin 16(3):90-91, 1980.

Research techniques and findings concerning the demonstration of peripheral alpha-adrenergic receptor subtypes are reviewed, and a model of the functioning of alpha-adrenergic receptor subtypes is proposed. Methods available for the delineation of alpa1 and alpha2 receptors in tissue using radioligand binding techniques are described, and some of the complexities of agonist binding to alpha-adrenergic receptors are discussed. It is suggested that agonists induce two affinity states of binding in membranes containing alpha2 receptors; the higher affinity state accumulates in the absence of guanosine triphosphate (GTP) and is abolished by the addition of GTP. It is further suggested that (3H)-agonists, the binding of which is generally guanyl nucleotide sensitive, may label this higher affinity state of alpha2 receptors rather than the entire alpha2 receptor population. 11 references.

000902 Kawashima, K.; Ishijima, B.; Yoshimizu, N.; Sato, F. Dept. of Pharmacology, Jichi Medical School, Minamikawachi-machi, Tochigi-ken, 329-04, Japan **Determination of dose-plasma concentration relationship of phenobarbital in epileptic patients by a new specific radioimmunoassay.** Archives Internationales de Pharmacodynamie et de Therapie. 244(1):166-176, 1980.

A specific radioimmunoassay for phenobarbital was developed using antiserum obtained from a rabbit immunized with a new antigen. A new phenobarbital hapten, 1-(4-carboxybutyl)-phenobarbital (CBP) was synthesized. The antiserum was used to develop a sensitive radioimmunoassay which could determine as little as 100 pg of phenobarbital. The radioimmunoassay was applied to the determination of plasma phenobarbital concentrations in epileptic patients and the results were compared with those obtained by a spectrophotometric technique. A significant dose/plasma concentration relationship for phenobarbital was observed in epileptic patients treated with phenobarbital for more than a month. Significant correlation between radioimmunoassay and spectrophotometric determination of plasma phenobarbital concentrations confirms the specificity and accuracy of the procedure. 20 references. (Author abstract modified)

000903 Kristensen, Ole; Larsen, Hans Find. Epilepsiklinikken, Odense Sygehus, DK-5000 Odense, Denmark **Value of saliva samples in monitoring carbamazepine concentrations in epileptic patients.** Acta Neurologica Scandinavica. 61(6):344-350, 1980.

Simultaneous saliva and serum concentrations of carbamazepine (CBZ) were determined by enzyme immunoassay technique in 120 epileptic patients on long-term treatment with CBZ. Saliva specimens were collected after the patients had chewed paraffin for 5 min. The correlation coefficient between serum and saliva concentrations of CBZ was 0.94, with a mean saliva/serum ratio of 0.31. Correlations and ratios were comparable among 83 patients receiving CBZ alone and among 37 patients receiving additional drugs. The method of saliva sampling failed in five patients (4%), but was otherwise applicable even in small children. The practical value of saliva sampling in monitoring CBZ treatment in epileptic patients is described. 16 references. (Author abstract modified)

000904 Kurland, Albert A.; Nagaraju, Arramraju; Hanlon, Thomas E. Dept. of Psychiatry, School of Medicine, University of Maryland, Baltimore, MD 21201 **The dopamine radioreceptor assay -- a clinical application.** Journal of Clinical Pharmacology. 20(10):553-559, 1980.

The clinical use of a recently developed dopamine receptor blocking assay (DRBA) during an investigation of the bioequivalence of a new dosage form of haloperidol is reported. In addition to the absence of any significant behavioral changes during the four week study, the DRBA also indicated the lack of any significant difference in the plasma neuroleptic equivalence of either dosage form (20mg dosage form and two 10mg tablets). It is concluded that the DRBA offers promise for clinical application in adjusting dosages and in monitoring compliance with neuroleptic drug regimens. 7 references. (Author abstract modified)

000905 Midha, K. K.; Cooper, J. K.; Hubbard, J. W. College of Pharmacy, University of Saskatchewan, Saskatoon, Saskatchewan S7N OWO, Canada **Radioimmunoassay for fluphenazine in human plasma.** Communications in Psychopharmacology. 4(2):107-114, 1980.

A new sensitive, specific and rapid radioimmunoassay procedure for the determination of plasma concentrations of the neuroleptic drug fluphenazine is described. This assay enables the quantitation of 50 pg of the drug in 200 mcl of plasma with negligible cross-reactivity with most of its metbolites. The method

is suitable for single dose pharmacokinetic studies and can be applied to therapeutic monitoring in patients following intramuscular treatment with the long acting depot preparation such as fluphenazine decanoate or fluphenazine enathate. 24 references. (Author abstract)

000906 Peyton, Gaylon A.; Harris, Steven C.; Wallace, Jack E. Dept. of Patnology, Texas College of Osteopathic Medicine, Fort Worth, TX 76107 **Determination of valproic acid by flame-ionization gas-liquid chromatography.** Journal of Analytical Toxicology. 3(May/June):108-110, 1979.

A rapid method is described for determination of the anticonvulsant valproic acid in biologic fluids by utilization of a gas chromatograph equipped with a flame ionization detector. After caproic acid is added to the biologic specimen as an internal standard, the specimen is extracted with 10% ethyl acetate in hexane, followed by direct chromatographic analysis using an SP-1000 liquid phase column. The procedure does not require solvent evaporation. Recovery of the drug is approximately 100%, with an interassay coefficient of variation of less than 4%. 9 references. (Author abstract)

000907 Ritschel, W. A.; Hammer, G. V. University of Cincinnati Medical Center, 401 Healthy Professions Building, Cincinnati, OH 45267 **Prediction of the volume of distribution from in vitro data and use for estimating the absolute extent of absorption.** International Journal of Clinical Pharmacology, Therapy and Toxicology. 18(7):298-316, 1980.

The relationship between the volume of distribution (delta'), extent of protein binding (EPB), and the apparent partition coefficient (APC) was investigated using 125 different drugs for which the data were retrieved from the literature, calculated, or determined experimentally. Psychotropic drugs were included. Equations were developed which allow one to predict the blood level concentration of a drug knowing the EPB, APC, and certain pharmacokinetic rate constants. Examples from the literature are cited in order to verify these equations. The delta'/APC/EPB relationship can be used to estimate a drug's volume of distribution in a patient from in vitro data, and estimate the extent of absorption of extravascularly given drugs when I.V. data cannot be obtained. 232 references. (Author abstract)

000908 Tamminga, Carol A.; Smith, Robert C.; Pandey, Ghanshyam; Davis, John M.; Frohman, Lawrence A. Dept. of Psychiatry, University of Chicago, Chicago, IL 60637 **A neuroendocrine study of supersensitivity in tardive dyskinesia.** In: Fann, W., Tardive dyskinesia. New York, SP Medical and Scientific Books, 1980. 531 p. (p. 345-354).

The use of neuropharmacologic probes to obtain biochemical evidence of the purported pathophysiology of tardive dyskinesia is reported. Emphasis was on two hormones (growth hormone or GH and prolactin or PRL) for which clear dopaminergic control is recognized. The results did not demonstrate endocrine supersensitivity in patients with tardive dyskinesia, as would have been predicted by the purported nigrostriatal supersensitivity. The results do not support the hypothesis of supersensitivity in the tuberoinfundibular neurons following chronic antipsychotic drugs in schizophrenics with or without TD, but do suggest the possible pharmacologic differences in central DA receptors. They also show a simultaneous hyporesponsiveness of GH and PRL to dopaminergic stimulation in chronic patients. 41 references.

000909 Vozeh, S.; Koelz, A.; Martin, E.; Magun, H.; Scollo-Lavizzari, G.; Follath, F. Follath: Division of Clinical Pharmacology, Dept. of Medicine, Kantonsspital Basel, Basel, Switzerland **Predictability of phenytoin serum levels by nomograms and clinicians.** European Neurology. 19(6):345-352, 1980.

On the basis of a reliable steady-state phenytoin serum concentration on one (lower) dose, the serum concentration on a second (higher) dose was predicted in 28 patients (32 levels) by two previously reported nomograms and three physicians who had clinical experience with phenytoin therapy. Both nomograms and all three physicians tended to underestimate the serum concentration on the higher dose. Except for one physician, this bias was statistically significant. The 68% confidence interval of the prediction error was found to be almost as large as the therapeutic range of the drug. Clinical implications are discussed. 19 references. (Author abstract modified)

17 MISCELLANEOUS

000910 Achte, K. Dept. of Psychiatry, University of Helsinki, Lapinlahdentie, SF-00180 Helsinki 18, Finland **Use of benzodiazepines in psychiatric in-patients.** Arzneimittel-Forschung. 30(5a):902-905, 1980.

The use of benzodiazepines in the treatment of psychiatric inpatients is reviewed. It is noted that various anxiety states and states of panic are the classical indications for the use of benzodiazepines in hospital treatment, but that the clinician must distinguish the cases where a depressive or schizophrenic symptom formation underlies the panic or anxiety. Though adequate alternatives to benzodizepines now exist for treatment of delirium tremens, benzodiazepines must be considered one of the most efficient and best forms of drug therapy in delirium tremens. Benzodiazepines may be used as hypnotics in cases where the patient's ability to sleep is considered important for his treatment. Short-acting preparations of the benzodiazepine group can usually be recommended, unless particular reasons indicate the use of long-acting ones. The possibilities and limitations of combining benzodiazepines with neuroleptics and antidepressants in the treatment of schizophrenic and depressive patients are discussed. 27 references. (Author abstract modified)

000911 Appelbaum, Paul S.; Gutheil, Thomas G. 74 Fenwood Road, Boston, MA 02115 **and clinical reality in drug refusal by psychiatric patients.** Bulletin of the American Academy of Psychiatry and the Law. 7(3):306-315, 1979.

In view of the recently formulated right of psychiatric inpatients to refuse treatments including medication, the clinical context of drug refusal was examined in 23 patients who overtly refused medication during a 3 month period in a state inpatient ward. These patients accounted for 72 discrete episodes of refusal and could be classified into three groups: situational refusers who were mostly newly admitted patients who refused treatment one to three times invariably for less than 24 hr; stereotypic refusers who used drug refusal as a stereotypic response to stress; and symptomatic refusers who refused consistently over extended periods during their acutc severe illnesses. All five of the patients in the last category offered multiple reasons for their refusal ranging from side-effects to privacy and right to refuse treatment. In the judgment of their physicians, all five were refusing for delusional reasons. Based on these results, it is argued that the constitutional bases put forth in the legal literature as supporting The right to refuse medication do not fit the clinical reality: in most cases patients are motivated to refuse treatment by anger, whim, or psychotic reasoning, not by a principled stand for individual autonomy or a rationally based informed refusal. Misconceptions about psychoactive medications and their use are also discussed. 28 references.

000912 Arato, M.; Erdos, A.; Polgar, Maria. National Institute of Nervous and Mental Diseases, Budapest Pf.1, 1281 Hungary **Endocrinological changes in patients with sexual dysfunction under long-term neuroleptic treatment.** Pharmakopsychiatrie Neuro-Psychopharmakologie. 12(6):426-431, 1979.

Prolactin, testosterone, luteinizing hormone (LH), and follicle stimulating hormone (FSH) serum level determinations by radioimmunoassays were performed on schizophrenic males with sexual dysfunction who were under long-term fluphenazine decanoate treatment. Of the 27 patients, sexual dysfunction was present in 17 cases, in 10 patients sexual activity remained unchanged. As compared to the 15 healthy controls, a significant increase of prolactin concentrations was found in the Ss. In the patients with normal sexual activity the increase of LH concentration was highly significant. Testosterone and FSH concentrations showed no differences between groups. It is suggested that normal sexual behavior, despite neuroleptic treatment and hyperprolactinaemia, is related to a high concentration of LH, though the mechanism of increased LH secretion is not clear. 31 references. (Author abstract modified)

000913 Bateman, William B., Jr.; Gordon, William. Dr. Martin Luther King, Jr. Community Health Center, Bronx, NY **How to successfully change a patient from one drug to another.** Behavioral Medicine. 7(7):25,28,29, 1980.

Techniques for successfully changing the drug prescriptions of patients at a New York community health center are described with emphasis on making the transition easier by employing behavioral strageties and a step-by-step approach. It is contended that upsetting patients' established routines by substituting another medication may produce undue anxiety and lead to noncompliance. Such changes must be carefully discussed with the patient and his family, explaining the reasons and giving them a chance to voice their reactions.

000914 Baxley, Robert C. Baxley & Elliott, Lawyers, 1059 10th Avenue, San Diego, CA 92101 **Voluntary intoxication from phencyclidine. Will it raise a reasonable doubt of the mental capacity of a person charged with a crime requiring specific intent or mental state?** Journal of Psychedelic Drugs. 12(3-4):331-335, 1980.

Legal principles of diminished capacity are discussed with reference to medical testimony in cases involving voluntary phencyclidine (PCP) intoxication. The medical literature on PCP effects is reviewed, and California law pertaining to offenses requiring both proof of a general and specific intent or mental state is outlined. The distinction between the insanity and the diminished capacity defenses is then discussed, and guidelines for pretrial preparation by the expert medical witness are presented. It is suggested that reasonable doubt becomes a powerful persuasive argument when the jury empathizes with the accused. In reaching a verdict, the jury will need to know if the accused at the time of commission of the crime could deliberate, premeditate, maturely and meaningfully reflect on the act, and be able to form the intent necessary to commit the crime. Definitions of these terms are provided. Finally, juror attitudes toward psychiatrists are discussed to emphasize the need for careful preparation if juror skepticism toward psychiatric testimony is to be overcome. 6 references.

000915 Beca, Eugenia Turenko. Rua Dias da Rocha, 79, ap. 602, 22051 Copacabana, Brazil /**Drug interactions in psychopharmacology.**/ Associacoes medicamentosas em psicofarmacologia. Jornal Brasileiro de Psiquiatria. 29(4):237-244, 1980.

Drug interactions in biological psychiatry are discussed. The use of two or more drugs in combination can be very advantageous in the treatment of depressions, mixed psychoses, and schizophrenia. Each drug when used in conjunction with another demonstrates completely different effects. Disadvantages of drug interaction are common and depend upon the drug combination. Factors which influence the choice of drug interactions include: socioeconomic, cultural background, and psychological. 47 references. (Journal abstract modified)

000916 Beers, Roland F., Jr.; Bassett, Edward G. no address **Mechanisms of pain and analgesic compounds.** Miles International Symposium Series, 11th. New York, Raven, 1979. 520 p. $51.35.

The proceedings of a conference on recent clinical contributions to understanding the mechanisms of pain and its relief via analgesic compounds are presented. Topics include an overview of the neurological significance of pain, endogenous substances having analgesic action, peripheral mechanisms of pain and analgesia, mechanisms of opioid analgesia and dependence, and new leads for the development of analgesics.

000917 Benesova, O.; Kumpel, Q. Dept. of Pharmacology and Physiology, Medical Faculty of Hygiene, Charles University, Prague, Czechoslovakia **21. Annual Czechoslovak psychopharmacological meeting.** Jesenik Spa, Czechoslavakia, 1979. 140 p.

Issues related to nootropic drugs and their effects are discussed in a series of papers presented at the 21st Annual Czechoslovak Psychopharmacological Meeting. Overviews and laboratory and clinical research are included. Emphasis is on the effects of psychotropics, particularly piracetam, on learning and memory processes. Finally, a number of clinical studies on the psychopharmacological treatment of minimal brain dysfunction in children, epilepsy, drug resistant depressions, organic psychosyndromes (such as chronic alcoholism), and in gerontopsychiatric patients are presented. Among drugs discussed are piracetam, pyrithioxine, meclophenoxate (centrophenoxine), and strychnine.

000918 Braestrup, Claus; Nielsen, M. A/S Ferrosan, Sydmarken 1-5, DK-2860 Soeborg, Denmark **Benzodiazepine receptors.** Arzneimittel-Forschung. 30(5a):852-857, 1980.

The recent experimental literature concerning the benzodiazepine receptors is briefly summarized. It appears that the benzodiazepines bind with high affinity to a single class of saturable sites on brain membranes of all higher vertebrates including man. There is good correlation between the pharmacological effects of different benzodiazepines and their affinity for 3H-diazepam and 3H-flunitrazepam binding sites, indicating that the binding site is the physiological relevant receptor upon which benzodiazepines act. The most active benzodiazepines, like lorazepam and triazolam, act in concentrations of about 1 nmol/1. The highest concentration of benzodiazepine receptors in human brain was found in cerebral cortical regions, intermediate levels were found in midbrain and some limbic structures, while white matter areas exhibit low levels. This indicates that benzodiazepines act preferentially in cortical areas. The presence of benzodiazepine receptors suggests that there may be an endogenous ligand for these receptors. Hypoxanthine, inosine, and nicotinamide have been isolated from brain tissue and proposed as endogenous ligands. These three compounds are very weak on benzodiazepine receptors. The most promising compound has been isolated from human urine and brain and is a lipophilic, small molecular weight aromatic compound, which exhibits very high affinity for benzodiazepine receptors. 96 references. (Author abstract modified)

000919 Bragg, Leslie. Women's Substance Abuse Resource Center, 1426 South Main Street, Suite B, Venice, CA 90291 **Outpatient treatment issues and strategies for acute and chronic PCP abusers.** Journal of Psychedelic Drugs. 12(3-4):289-292, 1980.

Outpatient treatment issues and strategies for acute and chronic phencyclidine (PCP) users, based on experiences with adolescents and adults, are discussed. Sociocultural and media, legal, and client and family involvement issues are briefly presented. In general, acute treatment strategies were similar to those used in other crisis intervention contexts. A variety of strategies have been found helpful in the treatment of the chronic PCP abuser including individual psychotherapy, group and family and couples counseling, body work, values clarification, keeping of personal journals, nonjudgmental drug information and education (including chemical awareness and nutrition), vocational counseling, and referral to medical, legal, and detoxification resources. In general, strategies were employed through trial and error and on the basis of client need. The program has taken on a multidisciplinary and holistic approach, and outreach and followup have become more active. 2 references.

000920 Breimer, D. D.; Jochemsen, R.; von Albert, H. H. Dept. of Pharmacology, Subfaculty of Pharmacy, Sylvius Lab., P. O. Box 9503, 2300 RA Leiden, The Netherlands **Pharmacokinetics of benzodiazepines: short-acting versus long-acting.** Arzneimittel-Forschung. 30(5a):875-881, 1980.

The clinical and experimental literature on the pharmacokinetics of benzodiazepines, and the literature concerning the distinction between the long-acting and short-acting benzodiazepines are reviewed. It is noted that among the various benzodiazepines, large differences exist with regard to their pharmacokinetic properties and metabolism in man. Some are eliminated from the body at a relatively slow rate (e.g., diazepam), others are metabolized rather rapidly (e.g., oxazepam, temazepam, triazolam). Several benzodiazepines have the long-acting metabolite N-desmethyldiazepam in common (diazepam, fosazepam, prazepam, clorazepate. Such differences may be very important clincically because pharmacokinetic factors will determine the duration of drug effect and pharmacokinetic parameters constitute the basis for a rational dosage regimen. For the various clinical indications of benzodiazepines the required duration of drug action differs quite fundamentally. In anticonvulsant and antianxiety treatment, continuous treatment is pursued, so that compounds with long elimination half-lives of parent drug or active metabolites are of advantage. If, on the other hand, a benzodiazepine is taken as a hypnotic, the duration of action should be restricted to the night, hence a compound with a short elimination half-life is to be preferred. 57 references. (Author abstract modified)

000921 Burdick, Bruce M.; Holmes, Cooper B. Manhattan Psychiatric Clinic, 117 South Fifth Street, Manhattan, KS 66502 **Use of the Lithium Response Scale with an outpatient psychiatric sample.** Psychological Reports. 47(1):69-70, 1980.

The predictive validity of two MMPI lithium response scales (Donnelly et al., 1978), male and female versions, was examined in 20 psychiatric outpatients with a history of hospitalization for major affective disorder. Patients had received antidepressant lithium therapy for a minimum of 6 weeks and up to 6 yrs. Results showed that the scales had low ability to correctly classify patients judged to be responders or nonresponders to antidepressant lithium therapy. Caution in the use of these measures is advised. 1 reference. (Author abstract modified)

000922 Carlson, Kristin R. Dept. of Pharmacology, University of Massachusetts Medical School, Worcester, MA **treatment.** In: Fann, W., Tardive dyskinesia. New York, SP Medical and Scientific Books, 1980. 531 p. (p.27-33).

Data are presented which link chronic narcotic usage to symptoms which mimic those of tardive dyskinesia as induced by neuroleptics, along with modifying evidence which may restrict the generality of this phenomenon. Experimental animal studies suggest that the syndrome differs from the usual clinical picture of tardive dyskinesia in one important respect: the necessity of eliciting symptoms with a dopaminergic agonist. Spontaneous dyskinesias were never observed in monkeys and guineapigs. However, species differences in susceptibility to dyskinesias suggest the need for caution in generalizing from animal models. Another question of clinical relevance is whether meth-

adone maintenance patients are at-risk for development of oral dyskinesias when they terminate treatment. The mechanism underlying this phenomenon in narcotic addicts remains speculative, although the evidence points to dopaminergic blockade in the striatum by narcotics, resulting in hypersensitivity after the blockade is lifted. 34 references.

000923 Cary, Martin Dickson. United States International University **Introversion and severity of the benzodiazepine withdrawal.** Dissertation Abstracts International. 41(3):1103-B, 1980. Ann Arbor, Univ. Microfilms No. 8019773, 113p., 1980.

The relationship between the personality trait of introversion and the severity of withdrawal from benzodiazepines was examined with nine subjects. Due to basic physiological differences, it was hypothesized that introverts would be more susceptible to severe withdrawal from Valium than extraverts. Results indicate no significant correlation between introversion and severity of withdrawal. Severe withdrawal symptoms appeared in 21% of the subjects supporting the evidence that Valium is a potentially addictive substance. (Journal abstract modified)

000924 Chappel, John N.; Smith, David E.; Buxton, Millicent. Anderson Medical Science Building, University of Nevada, Reno, NV 89557 **Paraprofessional and professional teamwork and training in managing PCP and other drug abuse problems.** Journal of Psychedelic Drugs. 12(3-4):301-306, 1980.

Issues in the training and teamwork of paraprofessionals and professionals working phencyclidine and other drug abuse problems are examined. Problems in continuing education are discussed including excessive formality, status models of professional roles, attitudinal barriers to involvement with drug abusers, and devaluation of the paraprofessional by the professional service provider. It is suggested that effective training approaches for professionals and paraprofessionals must deal with these problems. An androgogical (self-directed) approach is recommended as more appropriate to the self-image, experiences, and needs of the adult learner. Knowles' (1977) six steps for organizing inservice training are delineated. Using these methods, it has been possible to demonstrate positive attitude change and increased skills in educational program participants. 22 references.

000925 Costa, E. Laboratory of Preclinical Pharmacology, NIMH, St. Elizabeths Hospital, Washington, DC 20032 **Benzodiazepines and neurotransmitters.** Arzneimittel-Forschung. 30(5a):858-861, 1980.

The recent experimental literature concerning the benzodiazepines and neurotransmitters is briefly summarized. Benzodiazepines have been shown to change the turnover rate of serotonin (5-HT), acetylcholine (ACh) and catecholamines stored in selected brain areas, but the doses required for these effects are severalfold higher than those which elicit a persistent punished behavior or antagonize isoniazid, bicuculline, or picrotoxin convulsion. The selective antagonisms against convulsions elicited by drugs that impair GABAergic transmission, the capability of muscimol and other GABA receptor agonists to mimic behavioral and anticonvulsant action of the benzodiazepines have suggested that benzodiazepines facilitate GABA transmission. This facilitation of the GABA transmission is due to an allosteric facilitation of high affinity GABA binding to postsynaptic receptors. Also, the high affinity binding of the benzodiazepines can be facilitated by GABA mimetics. Endogenous inhibitors of the benzodiazepines, and GABA binding extracted from synaptic membranes play a role in facilitating these interactions. It is concluded that the benzodiazepines displace a regulatory protein for high affinity GABA receptors and thereby facilitate GABAergic transmission. 28 references. (Author abstract modified)

000926 Craig, Thomas J.; Behar, Roger. 40 Woodbine Rd., New City, NY 10956 **Trends in the prescription of psychotropic drugs (1970-1977) in a state hospital.** Comprehensive Psychiatry. 21(5):336-345, 1980.

Prescribing patterns in a state hospital were analyzed over an 8 year period (1970 to 1977) and revealed a significant reduction in the use of piperidine and piperazine neuroleptics and tricyclic antidepressants with an increase in use of butyrophenones and lithium. By 1977, prescribing patterns for men and women were virtually identical. Almost one third of the patients (chiefly long stay and elderly) were receiving no psychotropic medications. The patterns of medication contrasted strongly with patterns reported among medical patients and the general population and suggest increasing restraint and a trend toward more appropriate pharmacotherapy in this setting. This may be attributable in part, it is suggested, to an active educational program combined with a computerized drug exception system. 11 references. (Author abstract)

000927 Dalton, Katharina. 86 Harley Street, London W1, England **Cyclical criminal acts in premenstrual syndrome.** Lancet. No. 8203:1070-1071, 1980.

The cases of three women who successfully pleaded diminished responsibility or mitigation due to premenstrual syndrome in crimes of manslaughter, arson, and assault are reviewed. All had long histories of repeated misdemeanors, which continued while in prison. Police and prison records confirmed the diagnosis of premenstrual syndrome. The women were successfully treated with progesterone, and their behavior returned to normal. While it is suggested that claims of premenstrual syndrome as a mitigating factor for crimes are not substantiated, it is noted that the cost of progesterone therapy is much less than the cost of prison maintenance. 2 references. (Author abstract modified)

000928 Davis, Kenneth L.; Hollister, Leo E.; Vento, Adela L.; Berger, Philip A. Illinois State Psychiatric Institute, Chicago, IL **Cholinergic aspects of tardive dyskinesia: human and animal studies.** In: Fann, W., Tardive dyskinesia. New York, SP Medical and Scientific Books, 1980. 531 p. (p. 395-403).

Human and animal studies on the cholinergic aspects of tardive dyskinesia (TD) are reported, with emphasis on the efficacy of treating patients with this diagnosis with choline chloride. It was found that physostigmine significantly suppressed the abnormal involuntary movements of patients and suggest the value of developing a long-acting oral cholinomimetic for treatment of tardive dyskinesia. Both human and animal studies, however, suggest that choline chloride does not eliminate all symptoms, and that the mechanism of action of both choline chloride and physostigmine on TD remains speculative. Dimethylaminoethanol had little effect on TD symptoms. Further studies are necessary with other cholinomimetic agents to determine the extent that phamacological manipulation of the cholinergic nervous system can be used in treating TD. 19 references.

000929 Denber, Herman C. B. no address **Textbook of clinical psychopharmacology.** Serial Handbook of Modern Psychiatry. Don Mills, Ontario, Longman Canada, 1979. 356 p. Vol. 3. $36.90.

An overview of clinical psychopharmacology is presented within an wholistic framework that integrates both psychopharmacology and psychodynamics in treatment. Following an examination of diagnosis and wholistic treatment which considers both psychic and somatic aspects of the patient's life, the main classes of psychopharmacological agents, indications, and treatment and side effects are reviewed, including: neuroleptics, anx-

iolytics, antidepressants, and lithium. Tardive dyskinesia is dealt with separately from other extrapyramidal reactions, and its medicolegal implications are considered. Drug abuse is also discussed, as are the sedative/hypnotics and their use. Diagnosis and treatment of alcoholism, and issues in geriatric and pediatric psychopharmacology, including drug interaction effects, are covered. The relationship between psychopharmacology and psychodynamics is explored.

000930 Denes, Zsuzsanna. Hungarian National Institute of Medical Experts, Gorkij fasor 9/b H-1068 Budapest, Hungary **Look and old age.** Zeitschrift fur Alternsforschung. 34(5):429-435, 1979.

A geriatric sample of 100 Ss (aged 65 to 92) was classified into four categories of facial expressions. It is suggested that the cheerful eyed Ss can be treated easily; the sad eyed subjects will cooperate in antidepression therapy, the Ss with fixed or lifeless gazes exhibit mainly Parkinson's disease in need of antisclerotic treatment or may exhibit side-effects of the drugs, and the wicked or aggressive looking Ss are difficult to treat. The administration of psychopharmaceuticals, sedation, and antisclerotic treatment are recommended for the latter group. 15 references. (Author abstract modified)

000931 Dobrzynska, Leokadia; Kamraj-Mazurkiewicz, Krystyna; Majewska, Zofia. Klinika Neurologii Doroslych AM, ul. Debinki 7, 80-211 Gdansk, Poland **/Modern views on the principles of the pharmacological treatment of epilepsy./** Wspolczesne poglady na zasady leczenia farmakologicznego padaczki. Neurologia i Neurochirurgia Polska. 13/29(4):429-434, 1979.

A bibliographical review of current practices in the pharmacological treatment of epilepsy is presented. The study examines the conditions for initiating pharmacological treatment, its application as a function of the type of epilepsy, and the recommended dosage and dosage frequency. Conditions for terminating the pharmacological treatment are also discussed in relation to various physical indications and to the age of the patient. It is suggested that treatment procedures should not only take into account the appropriate treatment by pharmacological means but also an individualized rehabilitation program for each patient. 20 references.

000932 Essman, W. B.; Valzelli, L. no address **Current developments in psychopharmacology.** New York, SP Medical & Scientific Books, 1979. 465 p. Vol. 5. $50.

Ten invited papers reviewing current developments in the field of neuropsychopharmacology, which emphasize communication between basic scientists and clinicians, are presented. Topics discussed include: clinical data collection methods which facilitate communication with basic researchers; communications between biochemical concepts and behavioral concepts; histamine as a putative neurotransmitter; d-amphetamine-induced hypothermia; the effects of stress on neurotransmitter kinetics; the psychobiology of schizophrenia; the role of serotonin in affective disorders; circadian rhythms in manic-depressive disorder; the pharmacology of isolation-induced aggressive behavior; sex steroid control of fighting in male mice; and the effects of neuropeptides in amnesia.

000933 Extein, Irl. Fair Oaks Hospital, 19 Prospect Street, Summit, NJ 07901 **Psychopharmacology in psychiatric emergencies.** International Journal of Psychiatry in Medicine. 10(3):189-204, 1980.

The role of psychotropic medications in the treatment of psychiatric emergencies is considered. The emergency treatment of patients who are severely agitated, violent, or psychotic is based on the intramuscular (IM) administration of antipsychotic medications, such as haloperidol. In conjunction with psychological suport this can provide effective, safe, and humane treatment. Sedative hypnotics, such as diazepam, can be helpful for less severe anxiety states. Emphasis is directed to sedative, antipsychotic and disinhibiting effects, side-effects, absorption after oral and IM administration and the concepts of steady-state kinetics and the loading dose. 14 references. (Author abstract modified)

000934 Fann, William E.; Smith, Robert C.; Davis, John M.; Domino, Edward F. Baylor College of Medicine, Houston, TX 77025 **Tardive dyskinesia: research & treatment.** New York, SP Medical and Scientific Books, 1980. 531 p.

Research over the past 15 years on the current etiology and treatment of tardive dyskinesia is reviewed. Topics include: 1) animal models and the pharmacology of chronic neuroleptic drugs, including receptor binding studies, and use of trace metals in pathophysiology and treatment; and 2) clinical studies and the pharmacology of drugs, including research on the epidemiology of TD, drug history and other factors related to etiology, experimental studies of pathophysiology in man, cholinergic drugs and mechanisms in treatment, other treatment approaches, and neuroleptic therapy of psychiatric disorders and the accompanying risk of TD.

000935 Fauman, Michael A.; Fauman, Beverly J. Division of Psychiatric Consultation, Dept. of Psychiatry, Henry Ford Hospital, 2799 W. Grand Blvd., Detroit, MI 48202 **Chronic phencyclidine (PCP) abuse: a psychiatric perspective.** Journal of Psychedelic Drugs. 12(3-4):307-315, 1980.

Chronic phencyclidine (PCP) abuse is discussed from a psychiatric perspective. Data for 29 chronic PCP abusers indicated 60% had parents who used drugs (alcohol, depressants, marihuana, pain medication), 40% reported previous family psychiatric problems, 36% reported at least one drug overdose, and 24% reported previous suicide attempts. The usual PCP experience was generally described as more dysphoric than the initial experience, and subjects reported feeling increasingly moody or chronically numbed and slowed as they continued to use the drug. Having continued to use PCP after severe symptoms included numbness, loss of motor control, confusion, sensory distortion, and loss of consciousness. A second study (n=16) indicated that 12 had committed PCP associated violent acts, ranging from goal directed to psychotic violence, and results suggested an increased level of previous violence in these subjects. Clinical cases of six patients hospitalized for PCP associated psychoses showed various symptom patterns and drug use histories. Symptoms included agitation, paranoid delusion, hallucinations, catatonia, sleep disturbances, confusion, and stereotypic and/or bizarre behavior. 37 references.

000936 Feighner, John P. Dept. of Psychiatry, University of California, San Diego, CA 92037 **Pharmacology: new antidepressants.** Psychiatric Annals. 10(9):S35-S42, 1980.

A series of studies into the pharmacologic profiles, clinical efficacy, and adverse effects of the new classes of antidepressant drugs is summarized. In all these studies emphasis was placed on the development of greater diagnostic specificity correlated with diagnostic criteria, laboratory findings, and treatment response. Drugs thus studied include: 1) the new tetracyclics such as maprotiline, maprotiline analog, and mianserin; 2) a new psychotropic class of triazolopyridine derivatives that selectively inhibits serotonin uptake (e.g., trazodone); 3) other serotonin reuptake inhibitors including zimelidine, fluoxetine, and fluvoxamine; 4) the tetrahydroisoquinoline compound, nomifensine, which is a specific blocker of norepinephrine and dopamine reuptake; 5) bupropion, also a blocker of dopamine reuptake;

and 6) alprazolam, a new triazolobenzodiazepine with antidepressant effects. 23 references. (Author abstract modified)

000937 Fielding, Leonard T.; Murphy, Robert J.; Reagan, Michael W.; Peterson, Terrance L. Brainerd State Hospital, Box 349, Brainerd, MN 56401 **An assessment program to reduce drug use with the mentally retarded.** Hospital & Community Psychiatry. 31(11):771-773, 1980.

A two phase drug assessment program is described which has permitted an intermediate care facility for the mentally retarded to reduce its reliance on psychoactive medication and to meet the mandates of accreditation and law. The first phase involves identification of individuals who can effectively participate in treatment without medication. In the second phase, minimum effective dosages are identified for those whose maladaptive behavior could not be controlled when medication was abruptly removed. Of 68 residents who have completed phase two, 60% who had been taking medications no longer need them; and of the remainder, only eight have not maintained permanent dosage reductions. Moreover, since the reduction of medication levels, residents' adaptive behavior achievement levels have increased or remained the same. Benefits to the institution have included savings from decreased drug expenditures and a substantial reduction in medication related staff activity. 9 references. (Author abstract modified)

000938 Freyhan, Fritz A. 2015 R Street N.W., Washington, DC 20009 **Twenty years haloperidol: clinical effectiveness and theoretical implications.** Comprehensive Psychiatry. 21(4):251-257, 1980.

A review of the development and use of haloperidol as a major representative of neuroleptic treatment and theory is presented. The career of a newly discovered drug, as was the case with haloperidol, often depends substantially on optimal conditions of administration. At the present, prototype neuroleptics represent our most powerful weapon in the attack on major psychopathological syndromes. In the case of haloperidol, the therapeutic spectrum is broad, including manic states, a variety of schizophrenic syndromes, deliria of various etiologies, and certain neurological disorders. Twenty years of relative safety of haloperidol treatment have substantially advanced psychiatric and neurological treatment. 26 references.

000939 Freyhan, Fritz A. 2015 R Street, N.W., Washington, DC 20009 **The history of recent developments in psychiatry.** Comprehensive Psychiatry. 21(6):402-410, 1980.

Recent developments in psychiatry, as they are reflected in previous issues of Comprehensive Psychiatry, are reviewed. In the area of nosology particular emphasis is placed on the development of the Diagnostic and Statistical Manual of Mental Disorders III. The demise of the social curability myth which relied on unnecessary or even harmful hospitalization for psychiatric treatment is traced. Therapeutic and research issues, with particular attention to psychopharmacology, are also discussed. It is concluded that a fully satisfactory comprehensive integration of pharmacological, clinical, and psychopathological factors is still a challenge of top priority. 31 references.

000940 Gengo, Frank; Frazer, Alan; Ramsey, T. Alan; Mendels, Joe. Mendels: V.A. Hospital (151 E), University and Woodland Avenues, Philadelphia, PA 19104 **The lithium ratio as a guide to patient compliance.** Comprehensive Psychiatry. 21(4):276-280, 1980.

Whether erythrocyte concentration of the lithium ion (Li) can be used as an indicator of patient compliance with lithium therapy was examined with male bipolar or unipolar depressive patients. The ratio of red cell to plasma concentrations of Li showed very little variation while patients were in a steady state condition. Not taking Li for 3 days resulted in a decrease in the Li ratio. The concentrations of Li in red cells can provide useful information for assessing patient compliance. 9 references.

000941 Gerson, Sylvia C.; Baldessarini, Ross J. Dept. of Psychiatry, University of South Florida, Tampa, FL **Motor effects of serotonin in the central nervous system.** Life Sciences. 27(16):1435-1451, 1980.

The recent experimental literature concerning the motor effects of serotonin in the CNS is reviewed. It is noted that serotonergic pathways in the CNS affect posture and movement, as well as behavioral responses to arousing stimuli, but pharmacologic analyses have led to an increasingly complex and confusing literature. Increased availability of serotonin (5-HT) is generally but not invariably associated with motor inhibition. Decreased availability of 5-HT has generally increased motor activity, especially spontaneous locomotion in a familiar environment. However, other behaviors, such as responses in a novel environment have been decreased after loss of 5-HT. This differentiation may occur to an important extent through 5-HT projections to hippocampus and limbic structures, notably from the median raphe. It is noted that some effects of 5-HT may be mediated through catecholaminergic systems. Increased availability of 5-HT agonists after selective 5-HT denervation in the CNS had led to behavioral syndrome marked by hyperactivity, autonomic arousal and myoclonic seizures. The mechanisms underlying this complex response may be mediated by descending 5-HT systems that result in motor excitation at the spinal cord level, in contrast to rostral projections to forebrain that may mediate many behaviorally inhibitory responses. 124 references. (Author abstract modified)

000942 Growdon, John H.; Wurtman, Richard J. Dept. of Neurology, Tufts University Medical School, Boston, MA **Effects of choline-containing compounds on tardive dyskinesia and other movement disorders.** In: Fann, W., Tardive dyskinesia. New York, SP Medical and Scientific Books, 1980. 531 p. (p. 405-410).

Research supporting the suggestion that acetylcholine synthesis can be influenced by the levels of its precursor choline in the diet and in the blood stream is reviewed. The results indicate that choline ingestion increases the availability of choline for acetylcholine synthesis and release in humans as well as in rats, and that its administration can thus be used to enhance cholinergic tone in a disease (tardive dyskinesia) in which such tone is deficient. These data constitute the first rigorously controlled study to show that a naturally occurring dietary nutrient (choline) can be used to treat a nonnutritional brain disease. 25 references.

000943 Gyory, A. N. Dept. of Rehabilitation Medicine, Repatriation General Hospital, Sydney, Australia **The rational use of muscle relaxants in rehabilitation medicine.** Current Therapeutics. 21(7):81-82,84,86,89,91,93,96-98, 1980.

The rational use of muscle relaxants in rehabilitation medicine is addressed and information is provided on the mostly widely used compounds for treating spasticity, how to treat acute traumatic muscle spasm, use of relaxants in low back pain, when phenol block injections are indicated, and the best treatment for tension myalgia. Centrally acting relaxants include diazepam, chlordiazepoxide, baclofen, methocarbamol, orphenadrine citrate, meprobamate, carisoprodol, and chlorpromazine. Other compounds used in this area include neuromuscular blocking agents, and drugs that act on muscle spindle or skeletal muscles.

000944 Haase, Hans-Joachim. Pfalzklinik Landeck, Weinstrasse 100, D-6749 Landeck, Germany **Followup treatment and after-**

care of discharged schizophrenic patients. Schizophrenia Bulletin. 6(4):619-626, 1980.

A program of sociotherapeutic and psychopharmacological treatment of discharged schizophrenic patients is described. An important aspect of the aftercare program is the use of volunteers recruited from the community. The volunteers participate in an educational program in which they meet schizophrenic patients and receive information about the symptomatology and treatment of psychosis. As a result of this program, many lasting relationships are formed between patients and volunteers. In addition to such sociotherapeutic approaches, discharged patients also require a systematic program of pharmacotherapy. Particular emphasis is placed on the dosage and application intervals of long-term neuroleptics. A handwriting test was developed to establish the neuroleptic threshold, or the minimum dose a patient needs to compensate psychotic agitation and yet avoid the sedative major tranquilizers. 12 references. (Author abstract modified)

000945 Handford, H. Allen; Charney, Dennis; Ackerman, Larry; Eyster, M. Elaine; Bixler, Edward O. Dept. of Psychiatry, Milton S. Hershey Medical Center, Hershey, PA 17033 **Effect of psychiatric intervention on use of antihemophilic factor concentrate.** American Journal of Psychiatry. 137(10):1254-1256, 1980

The effects of patient emotional status on use of antihemophilic factor concentrate were evaluated by assessing the effects of psychiatric intervention in a severely hemophilic adolescent male. At time of referral, the patient was self-administering the medication 5 to 6 times weekly, at almost four times the dosage level used by most home therapy hemophilic patients. Mental status examination revealed anxiety about possibly having to reduce medication use, some adolescent conflicts, denial of being worried about his illness, and some disorganization under stress. The patient received 15 months of psychiatric treatment including family therapy to facilitate communication and training in self-hypnosis to be used in times of psychological stress. Over the study period, family communication improved and feelings of optimism replace depression. In addition, the patient significantly reduced his use of antihemophilic factor concentrate, and this reduction was maintained at 15 months after termination of therapy.

000946 Hartman, Ernest. no address **The sleeping pill.** London, Yale University Press, 1979. 313 p. L9.00.

The history of the sleeping pill from the days of the ancient Greeks to the present is explored including discussion of its use and misuse. Misuse is shown to be largely the one of overprescribing which often results from poor communication between doctor and patient, aided and abetted by expediency. The excessive use of hypnotics is also based on the false belief that insomnia is a disease that can be cured by sleep, however procured, and not a symptom of an underlying environmental, medical, or psychiatric cause which has to be discovered. It is argued that since the majority of so called hypnotics are simply central nervous system depressants, usually with habit forming properties, the risks inherent in their use very often outweigh their possible benefits. Safer and more rational treatments are explored, in particular, the use of L-tryptophan. A detailed account of some laboratory and clinical studies on the effects of drugs on sleep is included.

000947 Hier, Daniel B.; Caplan, Louis R. Michael Reese Hospital and Medical Center, Chicago, IL **Drugs for senile dementia.** Current Therapeutics. 21(7):127-137, 1980.

An approach to pharmacological treatment of senile dementia is described, along with current concepts of drug therapy with such patients. Manifestations of senile dementia include cognitive, affective, and self-care symptoms and care must be exercised in distinguishing it from other types of dementias (such as pseudo-dementia secondary to depression). Drug treatment alone cannot be considered as a cure since it is beneficial in alleviating symptoms but does not alter the course of the disease. Vasodilators are not recommended, and tricyclic antidepressants, tranquilizers and sedatives must be used with caution in the aged, and, generally, in reduced doses. CNS stimulants are rarely useful and side-effects are prominent. Choline and lecithin have some utility in their effects on cholinergic neurons. Nondrug therapies include simple behavioral manipulations and the provision of sensitive advice to patients and their families. 4 references.

000948 Iversen, L. L. MRC Neurochemical Pharmacology Unit, Dept. of Pharmacology, Medical School, Hills Road, Cambridge, England **The present status of benzodiazepines in psychopharmacology.** Arzneimittel-Forschung. 30(5a):907-910, 1980.

The present status of benzodiazepines in psychopharmacology is assessed, and research investigations concerning the benzodiazepine receptors, the hypothesized endogenous benzodiazepine-like substance(s), the relationship between benzodiazepines and CNS neurotransmitters, dissociable properties of the benzodiazepines, and tolerance and dependence are reviewed. Research questions mentioned include: 1) the mechanism(s) of action underlying the sedative, anxiolytic, and anticonvulsant effects of benzodiazepines; 2) similarities and differences with the barbiturates; 3) the hypothesized effects of benzodiazepines on the actions of GABA at CNS synapses; and 4) the possibility of benzodiazepine receptor subtypes in CNS. 28 references. (Author abstract modified)

000949 Johnston, Joseph A.; Coleman, James H.; Callaway, Janice T.; May, Charles N.; Druff, James H. Coleman: Va Hospital, 1030 Jefferson Ave., Memphis, TN 38104 **Protocols for the use of psychoactive drugs -- Part I: Protocol for the treatment of psychosis with antipsychotics.** Journal of Clinical Psychiatry. 41(11):375-377, 1980.

Protocols developed for use in outpatient psychiatric treatment of psychosis with antipsychotic drugs are described. Following a complete medical and mental status review, the patient is placed on appropriate medication and an attempt is made to prevent or eliminate frequently reported side-effects. These include drowsiness, insomnia, and anticholinergic complications. Extrapyramidal symptoms can often be controlled by temporary prophylactic use of antiparkinson/anticholinergic agents with antipsychotic agents. Other services available for client benefit include psychological, social, vocational rehabilitational, day-care, and support group programs. The final step in treatment is to stabilize dosage and set up followup interviews and yearly examinations. 10 references.

000950 Klawans, Harold L.; Goetz, Christopher G.; Paulson, George W.; Barbeau, Andre. Rush-Presbyterian-St. Lukes Medical Center, Chicago, IL 60612 **Levodopa and presymptomatic detection of Huntington's disease -- eight-year follow-up.** New England Journal of Medicine. 302(19):1090, 1980.

Followup data is presented on the use of oral levodopa as a possible means of presymptomatic detection of Huntington's disease in subjects at-risk. Originally 30 patients, all at 50% risk for Huntington's disease, received oral levodopa. Of the 10 subjects in whom transient chorea developed after exposure, five have been found to have Huntington's disease on the basis of subsequent development of chorea. Of 20 patients at-risk who had no chorea while receiving levodopa, only one has since been found

to have Huntington's disease. The data demonstrate a clear prognostic difference between the two groups of patients. 4 references.

000951 Klein, Donald F. Psychiatric Research, New York State Psychiatric Institute, 722 West 168 Street, New York, NY 10032 **Anxiety reconceptualized.** Comprehensive Psychiatry. 21(6):411-427, 1980.

The concept of anxiety is reconsidered in the light of early imipramine effects which indicated that an antidepressant drug could effectively ameliorate symptoms of anxiety. Agoraphobia, or panic attack, is the basis used for exploring the mechanisms of anxiety. Different theories, including learning theory and psychoanalytic theory, are presented and their deficiencies discussed. Behavior therapy and supportive psychotherapy are described and it is suggested that though both therapies have made contributions, their theoretical frameworks have prevented a clear understanding of the import of their activities. It is concluded that naturalistic clinical observation is the best source of hypotheses but that clinical experimentation is required to transform those hypotheses into knowledge. 28 references.

000952 Kramer, John C. Dept., of Psychiatry, University of California, College of Medicine, Irvine, CA 92717 **The opiates: two centuries of scientific study.** Journal of Psychedelic Drugs. 12(2):89-103, 1980.

A review of opiate research, from the early 1800s to the present, is presented. Because of the medicinal importance of opium, early research examined the nature of its narcotic properties both through clinical observation and chemical analysis and led to the isolation of morphine and other alkaloids of opium and the discovery of tolerance and physical dependence phenomena. In the latter half of the 19th century, opium addiction became prevalent and concern over growing use led to studies of its incidence and treatment. Research in the 20th century continued to be concerned with the effects and treatment, as well as social aspects, of opiate addiction. Since the late 1940s, developments have included the advent of addiction self-help groups and therapeutic communities, methadone maintenance, development and studies of a plethora of synthetic opiates and opiate antagonists, and the discovery of naturally occurring opiate-like peptides in the body which gives promise of better understanding of the mechanism of pain and the biochemistry of behavior. 92 references.

000953 Krupka, Lawrence R.; Vener, Arthur M. Dept. of Natural Science, Kedzie Laboratory, Michigan State University, East Lansing, MI 48824 **Hazards of drug use among the elderly.** Gerontologist. 19(1):90-95, 1979.

The total drug exposure of two typical elderly persons, one institutionalized and one living at home, was examined. Potentially harmful drug interactions were discerned in both cases. The findings suggest that health professionals, policymakers, and others who work with the elderly should take into account their total drug exposure (prescription, over the counter, alcohol, nicotine, and caffeine) with special reference to iatrogenic and self-medicated hazards. 25 references. (Author abstract modified)

000954 Lader, M. Dept. of Clinical Psychopharmacology, Institute of Psychiatry, University of London, London, England **The present status of the benzodiazepines in psychiatry and medicine.** Arzneimittel-Forschung. 30(5a):910-913, 1980.

The present status of the benzodiazepines in psychiatry and medicine is briefly described, and the extent of usage and the dangers of dependence are discussed. Indications for the benzodiazepines include symptomatic anxiety in its various forms. One condition for which the benzodiazepines are not indicated is depression. The benzodiazepines are effective hypnotics without the knock out action of the barbiturates. The reports of benzodiazepine-induced ggression and/or hostility are reviewed. The remarkable safety of the benzodiazepines with regard to overdoses and the hazards of abuse and dependence are compared. Differences among the benzodiazepines are discussed in relation to their duration of action. Several suggestions for curbing the overprescription of benzodiazepines are offered. 34 references.

000955 Lahmeyer, Henry W.; Steingold, Rose G. Dept. of Psychiatry, Abraham Lincoln School of Medicine, 912 South Wood St., PO Box 6998, Chicago, IL 60680 **Medical and psychiatric complications of pentazocine and tripelennamine abuse.** Journal of Clinical Psychiatry. 41(8):275-278, 1980.

The change in illicit drug use from 1973 to 1979 was studied using Chicago veterans as Ss. Barbiturate and amphetamine use has decreased significantly while a nearly seven fold increase in pentazocine use has occurred. All but one of the pentazocine users added tripelennamine to the intravenous or subcutaneous injections. Sixty-four instances of medical or psychiatric complications including seizures, abscesses, depression, and psychosis occurred in the 69 pentazocine and tripelennamine users. A possible pharmacologic explanation of the seizures and psychiatric complications is advanced. Most users of pentazocine and tripelennamine started in an attempt to withdraw from heroin or because of the poor quality of heroin available. 14 references. (Author abstract modified)

000956 Lapp, Janet E. McGill University (Canada) **Contributors to female use of psychopharmacological agents: dissertation).** Dissertation Abstracts International. 41(3):1092-B, 1980. (Not available from University Microfilms), 1980.

A conceptual model of psychotropic drug use was examined with 179 women chosen to reflect varying frequencies of drug use. Questions of initial problem recognition and definition, problem-solving ability, perception of control, and patient/physician interaction were explored. External causal attribution and lack of control were concomitants of drug use. Deficient problem-solving, particularly at the definitional stage, discriminated 73% of drug users. Physicians were found to prescribe according to factors additional to diagnosis and symptomatology. This research is seen as providing theoretical coherence to the complex gestalt of drug use. (Journal abstract modified)

000957 Lipsitt, Don R. Mount Auburn Hospital, 330 Mount Auburn Street, Cambridge, MA 02138 **Discussion: Communication and polypharmacy: drugs and the elderly.** Journal of Geriatric Psychiatry. 12(2):177-186, 1979.

The problems of polypharmacy in elderly inpatients on medical and surgical services of a general hospital is addressed. The view that physicians must be vigilant in treating elderly patients and must understand the complexity of illness in the aged and the character of doctor-patient interactions is examined. The importance of establishing reciprocal communication between doctor and patient as a method of analyzing drug giving and drug taking behavior is noted. Effective communication also serves to identify residual strengths and weaknesses in elderly patients, enhance the patient's self-esteem, and overcome in the physician many of the negative labels that accompany ageism in a modern society. 6 references.

000958 Loh, H. L.; Ross, D. H. no address **Neurochemical mechanisms of opiates and endorphins.** Advances in Biochemical Psychopharmacology. New York, Raven, 1979. 563 p. Vol. 20. $39.

Current research on neurochemical mechanisms for opiate and endorphin actions is reviewed. Topics discussed include opiate and endorphin receptor interactions; stereochemistry or morphinomimetics; chemistry and neurobiology of endogenous opiate peptides; role of messenger systems (cyclic nucleotides and calcium) in opiate actions; interaction of opiates and neurotransmitters; use of operant techniques to study opiate pharmacology; and effects of opiates on macromolecule biosynthesis and membrane function. The history of narcotic research is reviewed and future directions for reasearch are discussed.

000959 Maerz, John C. no address **/Perspective on adequate individualized drug doses./** Perspectiva de las dosis individualizadas adecuadas (DIA). Acta Psiquiatrica y Psicologica de America Latina. 25(1):69-73, 1979.

Haloperidol administration is discussed, with emphasis on the need for adequate individualized doses. The degree of tolerance varies widely from one patient to another, therefore they should not be treated in a rigid and uniform scheme. The success of the most efficient antipsychotic effect is precisely associated with the individualization of dose. The underlying objective of this type of treatment is to liberate the patient from a cycle which results in continuous hospitalization. The return of the psychotic patient to his social environment, with a productive capacity, is important from the medical viewpoint and also indirectly influences the future evolution of the field. 8 references.

000960 Marks, John. Girton College, Cambridge, England **The benzodiazepines -- use and abuse.** Arzneimittel-Forschung. 30(5a):898-901, 1980.

The level and patterns of benzodiazepines use and abuse are examined. The extent of therapeutic use is examined relative to the incidence of disorders associated with anxiety. It is concluded that, in general, the benzodiazepines are used conservatively by doctors rather than overused, and that the current consumption is not excessive relative to the level of emotional morbidity in the community. However, as with all psychoactive substances, dependence, both psychological and physical, can occur. This dependence is similar to alcohol/barbiturate dependence, though of less severity. The incidence of dependence under both therapeutic and abuse circumstances is quantified and found to be very low. The social significance of this level of dependence is examined relative to both the overall reliance of society on pleasure giving activities, and the puritan ethics still applicable to mental illnesses. Actions which might be taken to reduce dependence are reviewed. 46 references. (Author abstract modified)

000961 Mason, Aaron S.; Granacher, Robert P. Mental Health Branch, Dept. of Human Resources, Commonwealth of Kentucky, Lexington, KY **Clinical handbook of antipsychotic drug therapy.** New York, Grunner/Mazel, 1980. 329 p.

Fundamental principles of antipsychotic drug therapy are presented for use by physicians and psychiatrists who prescribe such medication. Topics include: 1) the pharmacokinetics of these compounds, general treatment procedures, and contraindications and side-effects; 2) rapid tranquilization methods; 3) clinical applications of antipsychotic drug therapy in treating geriatric patients, children, anxiety reactions, depression, psychiatric emergencies; 4) drug therapy combined with other therapeutic modalities; 5) side-effects and their management; and 6) lithium therapy; and 7) the depot fluphenazines. It is emphasized that antipsychotic drug therapy is as much an art as other forms of psychiatric treatment, necessitating adaptation of therapy to the individual patient. 455 references.

000962 McCurdy, L. Dept. of Psychiatry and Behavioral Sciences, Medical University of South Carolina, Charleston, SC **The short-term use of benzodiazepines.** Arzneimittel-Forschung. 30(5a):895-897, 1980.

The extent of benzodiazepine use in the western world is discussed, and the short-term use of benzodiazepines is reviewed in relation to the differential diagnosis of anxiety states. The expanding use of the benzodiazepines appears to correlate with the development of an increasing number of benzodiazepine derivatives. A description of the various categories of anxiety is followed by a discussion of the common signs and symptoms of the anxiety states. After a discussion of the differential diagnosis of the anxiety states, indications for benzodiazepine therapy are reviewed. Pharmacokinetic factors in the clinical choice of specific benzodiazepines are reviewed, and the use of benzodiazepines in other conditions, such as alcohol abstinence syndrome, acute toxic delirium, and insomnia is considered. Common side-effects and treatment complications are noted. 18 references. (Author abstract modified)

000963 Mo, Kan-ming. Guangzhou Psychiatric Hospital, Guangzhou, People's Republic of China **Twenty years clinical therapeutic experience with calcium glutamate's efficacy.** World Journal of Psychosynthesis. 12(1):13-17, 1980.

Data from the use of calcium glutamate since 1959 for the treatment of various nervous disorders in Guangzhou, China is reported. It was administered intravenously in its 10% solution 10 ml with 20 to 40 ml 50% glucose solution daily or every 2 days. Calcium glutamate is reported to be neither a sedative nor a stimulant, but it may promote sleep, relieve headache, and have a calming effect on anxiety. At the same time it may increase mental alertness and reduce fatigue in most patients. It is recommended as indicated for patients of neurasthenia, neurasthenic syndrome, organic brain syndrome (especially posttraumatic, hepatocerebral syndrome) and some neuroses (e.g., obsessive-compulsive neurosis). 9 references. (Journal abstract modified)

000964 Moroji, Takashi. Division of Psychopharmacology, Psychiatric Research Institute of Tokyo, Tokyo, Japan **On the mechanism of therapeutic actions of psychotropic drugs.** Brain and Nerve. 31(11):1075-1097, 1979.

The mechanism of therapeutic actions of psychotropic drugs is discussed from morphological, physiological, and biochemical points of view. Three major categories of psychotherapeutic drugs are discussed: antipsychotics, antidepressants, and anxiolytics. These are further classified into subcategories according to their chemical structure. The mechanism of therapeutic actions of antipsychotics are examined in connection with neurotransmitter chemicals. Other topics discussed include: receptor mediated dopamine metabolism, clinical and pharmachological implications of dopamine receptor binding, and chronic dosages of antipsychotics and dopamine receptors. Therapeutic actions of antidepressants, especially tricyclics, and anxiolytics, especially benzodiazepine, are also described. 83 references.

000965 Murray, Joseph N. 311 White Hall, Kent State University, Kent, OH 44242 **Understanding and use of chemotherapy by learning disabilities and behavior disorders teachers.** Journal of Learning Disabilities. 13(7):356-360, 1980.

Understanding and use of chemotherapy, medication policies, and intervention strategies supplementing chemotherapy were examined in 82 questionnaire responses from learning disability/behavior disorder (LD/BD) teachers in a nine county area of Ohio. In keeping with increased mainstreaming, teachers reported increased involvement with LD/BD youngsters (an average of 12.6 per teacher). An average of fewer than two (1.75) of these teachers' pupils were reported to be taking some kind of stimulant or depressant to modify cognitive or behavioral capa-

bility. Of teachers, 365 reported their school had no medication policy or none they were aware of. Ritalin was the medication of 73% of children receiving pharmacotherapy, and teachers were far more knowledgeable about stimulant effects than about depressant drug effects. Teachers appeared to prefer behavior modification strategies and environmental and program modifications and their combinations over the use of medication as an intervention. There was also an expressed preference for using medication in conjunction with other strategies as opposed to using medication as an intervention by itself. 3 references. (Author abstract modified)

000966 no author. no address **Proceedings of the British Pharmacological Society, 12th-14th September, 1979, University of Leeds.** British Journal of Pharmacology. 68(1):107p-189p, 1980.

Summaries of 91 papers read at the September 1979 meeting of the British Pharmacological Society, held at the University of Leeds, are presented. Research results shed light on the effects which various pharmacological agents have on the neurological, biochemical, and behavioral functioning of animals and humans.

000967 no author. Kingsboro Psychiatric Center, 681 Clarkson Avenue, Brooklyn, NY 11203 **Consider this ... Psychotropic medications and their effects on patients.** 16mm film optical B&W 23 min rental 1979

Features, Paul, a 29-year-old patient who describes his experiences with various drugs prescribed for him by doctors who had not informed him about possible side-effects. Emphasizes his anger over the lack of communication between him and various therapists and includes recollections of frightening reactions to various brand name compounds. The reactions include epileptic type seizures, locked jaw, and impotence. Makes a case for more open and frank communication between doctor and patient. Useful for community care workers who are doing follow-up of released clients, as well as for medical and nursing students. (Journal abstract modified)

000968 Ochs, Hermann R.; Pabst, Joachim; Greenblatt, David J.; Dengler, Hans J. Medizinische Universitatsklinik, D-5300 Bonn-Venusberg, Germany **Noninteraction of digitoxin and quinidine.** New England Journal of Medicine. 303(12):672-674, 1980.

In view of the large and clinically important interaction between digoxin and quinidine, the pharmacokinetic interaction of the cardiac glycoside, digitoxin, and quinidine was evaluated in 10 healthy male and female volunteers. Coadministration of quinidine (500mg twice daily) did not significantly affect clearance or distribution of intravenously administered digitoxin. Thus, in clinical terms, findings suggest that digitoxin can be coadministered with quinidine with no appreciable change in digitoxin kinetics. 11 references. (Author abstract modified)

000969 Ostow, Mortimer. Jewish Theological Seminary of America, Broadway and 122nd St., New York, NY 10027 **The psychodynamic approach to drug therapy.** New York, Van Nostrand Reinhold, 1979. 344 p.

Findings are reported from a project to study the psychologic changes brought on by psychopharmacological treatment and the manner in which they affect psychopathology. The importance of drug therapy in psychiatry and psychoanalysis is emphasized, along with the need for psychiatrists and analysts to understand basic psychopharmacological concepts and practices. Four individual themes are pursued in this respect, and these include: 1) observations on the clinical pharmacology of psychotropic drugs; 2) the psychological changes occurring in mental illness and the influences which elicit them; 3) problems involved in a combination of pharmaceutic agents; and 4) observations about states of mental illness as illuminated by their response to pharmaceutic agents.

000970 Ostow, Mortimer. Jewish Theological Seminary of America, Broadway and 122nd St., New York, NY 10027 **Observations on clinical pharmacology.** In: Ostow, M., The psychodynamic approach to drug therapy. New York, Van Nostrand Reinhold, 1979. 344 p. (p. 9-23).

Observations on the clinical pharmacology of drugs used in treating mental illness are reviewed. One issue is the sensitivity of a given patient to drug therapy, while another involves the various mechanisms by which drugs produce their effects. A classification of drug action is offered to explain these differences. This classification involves isolation of the principal action of psychotropic drugs, such as those used in depression, mania, or schizophrenia; pharmacologic effects other than the primary effect; psychological responses to physiologic side-effects, changes erroneously attributed to medication; and toxic structural effects.

000971 Ostow, Mortimer. Jewish Theological Seminary of America, Broadway and 122nd St., New York, NY 10027 **Problems involved in the combination of pharmaceutic agents with psychotherapy or psychoanalysis.** In: Ostow, M., The psychodynamic approach to drug therapy. New York, Van Nostrand Reinhold, 19790. 344 p. (p. 47-63).

The use of psychotropic drugs in psychotherapy or psychoanalysis is discussed with emphasis on problems involved in the combined use of several compounds. It is contended that the success of drug therapy depends not only upon proper choice of compound and proper dose, but also upon features of the patient's constitution which make him susceptible to the drug, and on the circumstances under which it is given (psychic effects). In regard to psychic effects, insight therapy must be used to identify underlying conflicts, resistances and psychodynamics which precipitate mental illness, while drug treatment should be used to render the client amenable to such therapy and to overcome symptomatic discomfort. Examples are cited for the treatment of psychotic depression, schizophrenia, and anorexia nervosa to demonstrate the complex relation between drug therapy and psychoanalysis, particularly in the case of transference.

000972 Ostow, Mortimer. Jewish Theological Seminary of America, Broadway and 122nd St., New York, NY 10027 **Observations about states of mental illness as illuminated by their response to pharmaceutic agents.** In: Ostow, M., The psychodynamic approach to drug therapy. New York, Van Nostrand Reinhold, 1979. 344 p. (p. 65-70).

Observations are made about states of mental illness as illuminated by their response to pharmaceutic agents and case examples are cited to demonstrate the complexity of drug influence upon the depressive sequence. These examples indicate that the depression was alleviated by anti-depressive medication and that attempts were made to recover from the depression by states characterized by psychotic anger, false independence, and self-analysis. The relation between schizophrenia and depression was also noted, along with the possibility that they represent alternative responses to stress. Additional topics include questions about such phenomena as hypochondriacal delusions and paranoid projection and the case of amphetamine addiction with chronic, paranoid psychosis.

000973 Pandey, Ghanshyam N.; Goel, Indra; Davis, John M. Research Dept., Illinois State Psychiatric Institute, 1601 W. Taylor St., Chicago, IL 60612 **Effect of neuroleptic drugs on lithium uptake by the human erythrocyte.** Clinical Pharmacology and Therapeutics. 26(1):96-102, 1979.

The effects of neuroleptic and antidepressnat drugs on lithium (Li) uptake in human red blood cells were examined. All the phenothiazines increased Li influx in erythrocytes and the steady-state Li distribution ratio in vitro. This effect was not observed with the other drugs tested. The phenothiazine-induced increase in Li levels in tissue may be related to the neurotoxic effects reported for combined treatment with Li and phenothiazine. 22 references. (Author abstract modified)

000974 Paton, D. M. no address **The release of catecholamines from adrenergic neurons.** Oxford, Pergamon Press, 1979. 393 p. $20.00.

Basic mechanisms underlying adrenergic neurosecretion at both central and peripheral sites and pharmacological influences thereon are reviewed. The first section deals with the mechanisms and regulations of adrenergic neurosecretion upon nerve stimulation, including biochemical and ultrastructural studies, calcium and presynaptic adrenoceptors and cholinoceptors, prostaglandins, and cyclic AMP. The second section reviews the modifications of catecholamine release induced by various drugs including adrenergic neuron blocking agents, narcotic analgesics and opiod peptides, LSD, anesthetics and alcohol, adenosine and adenine nucleotides. The third section presents data on transmitter release induced by nicotinic agonists, calcium ionophores, alterations in extracellular potassium and sodium, by veratridine and scorpion venom, and by phenethylamines. In the final section, the biochemical assessment of peripheral adrenergic activity and the clinical pharmacology adrenergic neuron blocking agents are discussed.

000975 Piafsky, K. M. Div. of Clinical Pharmacology, Toronto Western Hospital, Suite 425, Edith Cavell Wing, 399 Bathurst St., Toronto, Ontario M5T 2S8, Canada **Disease-induced changes in the plasma binding of basic drugs.** Clinical Pharmacokinetics. 5(3):246-262, 1980.

Research on disease-induced changes in the plasma binding of basic (cationic) drugs is reviewed, and implications for clinical management are discussed. It is noted that both alpha 1 acid glycoprotein, and albumin liporproteins show large fluctuations due to physiological and pathological conditions, and that decreases and increases in plasma binding of basic drugs associated with these changes have been reported. It is predicted: 1) that increased binding will tend to decrease the volume of distribution of total (bound plus free) drug; 2) that the clearance will be unchanged or decreased depending on the initial clearance of the drug and the avidity of the protein binding; 3) that changes in drug half lives will be variable, depending on both clearance and volume of distribution; 4) that the area under the free drug plasma concentration/time curve will decrease with increasing binding after an intravenous dose while it will be unchanged after an oral dose; and 5) that plasma concentration monitoring of drug therapy by use of total drug concentrations will be inaccurate in situations in which large variations in binding occur. 117 references. (Author abstract modified)

000976 Plevova, J.; Boleloucky, Z.; Bastecky, J. Pharmacological Institute, Srobarova 50, Prague 10, Czechoslovakia **Placebo reaction in neurotics rated with the SCL-90 questionnaire.** Activitas Nervosa Superior. 21(3):150-151, 1979.

Placebo effects during a series of short-term double-blind cross-over studies with psychotropic drugs in neurotics were investigated via administration of the SCL-90 questionnaire to 50 neurotic Ss. Of 90 items in the questionnaire, a significant reduction in the intensity of difficulties after the placebo occured in 17. Of nine syndromes assessed by the questionnaire, placebo treatment significantly reduced the intensity of seven syndromes. Only psychosomatic and phobic syndromes remained unaffected by the placebo. It is concluded that the significant reduction of intensity of neurotic symptomatology without change in the number of symptoms reported is a typical characteristic of the placebo effect. 4 references.

000977 Radovancevic, Ljubomir; Skaricic, Velimir. Vojna bolnica, Zagreb, Yugoslavia **/Psychopharmacological and psychotherapeutic approaches to the treatment of functional psychoses./** Psihofarmakoloski i psihoterapijski pristup tretmanu funkcionalnih psihoza. Socijalna Psihijatrija. 7(3):327-331, 1979.

The combined use of pharmacotherapy and psychotherapy in the inpatient and outpatient treatment of functional psychoses is discussed. Both inpatient and outpatient treatment of functional psychoses are supported almost invariably by pharmacotherapy in Yugoslavia. It is contended that the pharmacological support of psychotherapy does not minimize its importance; it only enhances psychotherapeutic effects and facilitates the course of recovery. However, it can be difficult to distinguish the psychopharmacological or other aspects of the physical treatment of psychotics from individual or group psychotherapeutic effects. In many cases, when combined with psychotherapy, psychopharmacological agents have alleviated acute crisis and psychotic episodes, controlled anxiety and aggression, and removed or reduced symptoms at the beginning of therapy. This process helps the patient form a more positive and constructive attitude, and allows exploration of problems and the elaboration and resolution of conflicts. 4 references. (Journal abstract modified)

000978 Rafaelsen, Ole J. School of Medicine, University of Copenhagen, Copenhagen, Denmark **Biology of manic-melancholic disorders.** Medical Journal of Australia. 1(13):637-643, 1980.

The biological basis of manic-depressive disorders is reviewed, and absolute requirements of any etiological theory of manic-depressive disorder are discussed. Research in the areas of genetics and epidemiology, pathology, physiology, biochemistry and psychopharmacology is cited. The etiological research on amines and amine metabolism and the hypophyseal/hypothalamic axis is reviewed and suggestions for further research are offered. Five pharmacological approaches to manic-depressive disorder are examined: electroconvulsion; tricyclic antidepressants; monoamine oxidase inhibitors; lithium; and sleep deprivation. A four subtypes, membrane transport deficiency model of manic-depressive disorder is proposed. 53 references.

000979 Ray, Wayne A.; Federspiel, Charles F.; Schaffner, William. Vanderbilt University School of Medicine, Nashville, TN 37232 **A study of antipsychotic drug use in nursing homes: epidemiologic evidence suggesting misuse.** American Journal of Public Health. 70(5):485-491, 1980.

The prescribing of antipsychotic drugs for patients in nursing homes was investigated. The review of 384,326 prescriptions for 5,902 Medicaid patients covered those who resided continuously for 1 year in 173 Tennessee nursing homes. Of these patients 43% received antipsychotic drugs; 9% were chronic recipients. Of the 1,580 physicians who cared for these patients, 42% prescribed antipsychotic medication. Wide variation in antipsychotic drug use occurred among nursing homes. It is concluded that the findings provide epidemiologic evidence suggesting misuse of antipsychotic drugs in nursing homes. The need for investigations of techniques for patient management in nursing homes that rely less upon psychotropic drugs is noted. 27 references. (Author abstract modified)

000980 Richelson, Elliott. Mayo Foundation, Rochester, MN 55901 **Neuroleptics and neurotransmitter receptors.** Psychiatric Annals. 10(11):21-23, 27-31, 34-37, 40, 1980.

The interactions of neuroleptics and their therapeutic and other pharmacologic effects in patients are described. The molecular bases of neurotransmission and the chemical structures of neuroleptics are discussed. Neurophysiologic and biochemical studies are reviewed. Dopamine, muscarinic acetylcholine, histamine, and alpha-noradrenergic receptors are explored. Finally, the clinical relevance of neurotransmitter receptor antagonism by neuroleptics is discussed. The interaction of neuroleptics with a number of neurotransmitter receptors is seen to relate to the therapeutic and adverse effects of these drugs in patients. It is hoped that the data presented will enable the physician to minimize drug/drug interactions and certain adverse effects when treating patients with neuroleptics. 66 references.

000981 Salzman, Carl; van der Kolk, Bessel A. Massachusetts Medical Center, 74 Fenwood Road, Boston, MA 02115 **Psychotropic drugs and polypharmacy in elderly patients in a general hospital.** Journal of Geriatric Psychiatry. 12(2):167-176, 1979.

Psychotropic drug prescribing practices with elderly inpatients on medical and surgical services of a general hospital were surveyed with emphasis on the problem of polypharmacy. It was found that patients who take a psychotropic medication take an average of eight drugs simultaneously for a variety of symptoms. The drugs include tricyclic antidepressants, diazepam, and combinations of benzodiazepines and other psychotropic compounds. The patterns do not portray poor medical practice but indicate that physicians should be alert to potential nontherapeutic consequences when adding psychotropic drugs to the treatment of elderly inpatients. 14 references.

000982 Sandford, Donald A. Hillcrest Hospital, Box 202 G.P.O., Adelaide, South Australia, 5001 Australia **A note on patterns of drug prescribing in a residential center for the intellectually handicapped.** Australian Journal of Developmental Disabilities. 6(2):95-97, 1980.

The problem of the use of medication in the control of antisocial and other forms of inappropriate behavior in residential hospitals is addressed. Recent studies are cited showing that a high proportion of institutionalized patients were on medication for behavior problems, indicating that drug therapy and not educative or training procedures such as behavior modification programs remain the treatment of choice. Evidence which suggests that drug therapy is administered because of the benefits that result for staff and which shows that medication is less effective relative to reinforcement procedures is discussed. Reasons why there continues to be an emphasis on pharmacological solutions to behavioral disturbances are suggested. 13 references.

000983 Sandler, M.; Glover, Vivette; Elsworth, J. D.; Lewinsohn, Rachel; Reveley, M. A. Queen Charlotte's Maternity Hospital, University of London, London, England **Monoamine oxidase and its inhibition: some clinical implications.** In: Singer, T., Monoamine oxidase. New York, Academic Press, 1979. 557 p. (p. 447-456).

Clinical research data on monoamine oxidase (MAO), both type-A and type-B, and their inhibition are reviewed. The existence of endogenous MAO inhibitors is addressed, along with the use of MAO inhibitors as drugs in treating a variety of disorders, including depressive illness. The nature of the so called cheese effect, a potentially lethal reaction, caused by the MAO inhibitor, deprenyl, is also described. Findings suggest the coexistence of two types of pharmacological response to an irreversible MAO inhibiting drug (MAO inhibition itself and facilitation of noradrenaline release from its storage vesicles). 59 references.

000984 Schwarz, Eitan D. Suite 1204, 111 North Wabash Avenue, Chicago, IL 60602 **A revised checklist to obtain consent to treatment with medication.** Hospital & Community Psychiatry. 31(11):765-767, 1980.

A checklist has been developed to obtain patient consent for medication, including psychopharmacological treatment, and to enable the physician to comply with legal tests for obtaining informed consent (i.e., understanding, compentency, and voluntariness). The one page form documents the process of obtaining consent and certifies that the physician has discussed the benefits, side-effects, and risks of medication. A revised checklist is now in use which better equips the physician to deal with cases in which the patient's condition reduces his capacity to give fully informed, valid, and voluntary consent. On the checklist, the physician assesses the patient's clinical condition as shock, denial, distress, dependency, or recovery, and accordingly indicates the patient's capacity to give fully valid consent. The checklist procedure allows the physician to withhold certain information for good medical reasons. Like its predecessor, the revised checklist is thought to provide the physician with reasonable protection from prosecution and has been shown to enhance the therapeutic relationship when used properly. 7 references. (Author abstract modified)

000985 Settle, Edmund C., Jr.; Ayd, Frank J., Jr. Dept. of Psychiatry and Behavioral Sciences, West Virginia University Medical Center, PO Box 2867, Charleston, WV 25330 **Trimipramine: twenty years' worldwide clinical experience.** Journal of Clinical Psychiatry. 41(8):266-274, 1980.

Evidence is presented from 20 years of clinical experience with trimipramine as a tricyclic antidepressant. Data are presented on its efficacy, onset of therapeutic response, dosage, therapeutic technique, single daily doses continuation and maintenance therapy, side/effects, sedation, cardiovascular effects, laboratory testing, convulsions and EEG effects, weight gain, use in treating schizophrenia and mania, use in special populations such as geriatrics, interactions with other drugs, and overdosages. It is concluded that the drug's efficacy and safety have been sufficiently demonstrated and that its assets include compatibility with most other drugs taken by depressed patients make it a useful medication for general and specialized populations. 76 references.

000986 Siegel, Ronald K. PO Box 84358, Veterans Administration Branch, Los Angeles, CA 90073 **PCP and violent crime: the people vs. peace.** Journal of Psychedelic Drugs. 12(3-4):317-330, 1980.

Results of a study of 45 cases of phencyclidine (PCP) associated criminal violence in adults are discussed. A brief history of drug-induced criminal iolence is provided, and definitions of dangerous drug, violence and insanity are presented. All 45 defendants had multiple drug use histories; psychological testing revealed a typical profile of an assaultive and combative male who attempts to keep his impulsive feelings controlled with drug intoxication. Profiles were strikingly similar to characterizations of the aggressive persistent lawbreaker. For most defendants PCP was a recreational/social drug; obsessive thoughts, paranoia, and hallucinations were surprisingly common. In all these cases the major legal issue was criminal responsibility; PCP was found to have mitigated criminal responsibility in 14 (31%) of the 45 cases. Case reports are presented illustrating murder with psychosis and flashback, with PCP intoxication and partial amnesia, with PCP intoxication and attempted suicide, and with previous PCP use. A case involving rape and attempted murder and one involving attempted rape with PCP intoxication are also reported. 42 references.

000987 Simko, A. Second Dept. of Psychiatry, Robert Karoly Municipal Hospital, Budapest, Hungary **Major tranquillizers in psychiatry.** Therapia Hungarica. 28(2):54-59, 1980.

The history of the development and clinical use of neuroleptics is reviewed. These drugs have a selective inhibitory action on the production of false perceptions and autism of schizophrenic patients. The target symptoms of psychoses determine the type of neuroleptic treatment. A combined step by step treatment is recommended. The prevention of unwanted effects as well as the improper use of these drugs are discussed. Psychiatric aspects involved in drug therapy are also considered. 24 references.

000988 Skondia, V. UCB -- Pharmaceutical Sector, Brussels, Belgium **Criteria for clinical development and classification of nootropic drugs. An example: piracetam.** In: Benesova, O., 21. Annual Czechoslovak Psychopharmacological Meeting. Jesenik Spa, Czechoslovakia, 1979. 140 p. (p. 40-54).

Criteria for the development and classification of nootropic drugs are discussed within the context of preliminary pharmacological studies of piracetam in the rat. Six criteria are suggested for defining a nootropic drug: 1) it should have no direct vasoactivity (vasodilation, vasoconstricton); 2) it should cause no quantitative or qualitative change in basic EEG activity; 3) it should pass the blood/brain barrier under both normal and pathological conditions; 4) it should have minimal side-effects; 5) it should show metabolic activity in animals and man; and 6) it should result in both clinical and objective cerebral metabolic improvement. A number of tables provide additional information including activity and biochemical effects of a number of nootropics (hydergine, vincamine, pyrithioxine, meclophenoxate, and piracetam), effects of piracetam on rat brain neurotransmitter levels and on adenylate kinase activity, and biochemical studies with clinical conformation (in hypoxia and ischemia, intoxication, aging, and myelinization). 38 references.

000989 Smith, James M. Office of Clinical Research, Harlem Valley Psychiatric Center, Station A, Wingdale, NY 12594 **Abuse of the antiparkinson drugs: a review of the literature.** Journal of Clinical Psychiatry. 41(10):351-356, 1980.

Evidence concerning abuse of antiparkinson drugs is reviewed. The literature indicates that the anticholinergic antiparkinson drugs can be abused by some patients to achieve pleasurable effects ranging from a mild euphoria with increased sociability at the lower doses to a toxic anticholinergic psychosis with disorientation and hallucinations at higher doses. Trihexyphenidyl may have a greater potential for abuse but there has been no systematic data on the issue. It is suggested that while abuse of these drugs may not be widespread, it is a factor arguing for their judicious use. 24 references. (Author abstract modified)

000990 Snyder, Solomon H.; Goodman, Robert R. Dept. of Pharmacology and Experimental Therapeutics, Johns Hopkins University School of Medicine, Baltimore, MD 21205 **Multiple neurotransmitter receptors.** Journal of Neurochemistry. 35(1):5-15, 1980.

The clinical and experimental literature on the multiplicity of neurotransmitter receptor types is reviewed, and the characteristics of the various receptors are summarized. Opiate receptor heterogenity is described, and methodological considerations in the study of opiate receptor binding are discussed. Other topics discussed include: drug influences on different 3H ligand interactions with opiate receptors; distinguishing features of multiple postsynaptic biogenic amine receptors; alpha-adrenergic receptors; dopamine receptors; serotonin receptors; histamine receptors, and GABA receptors. 83 references.

000991 Stein, L. Dept. of Pharmacology, College of Medicine, University of California, Irvine, CA 92664 **Behavioral neurochemistry of benzodiazepines.** Arzneimittel-Forschung. 30(5a):868-873, 1980.

The behavioral neurochemistry of the benzodiazepines is reviewed in relation to clinical effects. The therapeutic effects of benzodiazepines in psychoneurosis may depend in part on their ability to disinhibit a patient's anxiety suppressed, gratification seeking behavior. Benzodiazepines may disinhibit behavior by reducing the activity of serotonin (and possibly acetylcholine) neurons in the brain's punishment system. Reduction of serontonin transmission may be due to a facilitation of GABA mediated presynaptic inhibition at the serotonin nerve terminal. 35 references. (Author abstract modified)

000992 Steinberg, Derek. Adolescent Unit, Bethlem Royal Hospital, Monks Orchard Road, Beckenham, Kent BR3 3BX, England **The use of lithium carbonate in adolescence.** Journal of Child Psychology and Psychiatry. 21(3):263-271, 1980.

The pharmacology of lithium is reviewed and problems encountered when treating adolescents with lithium are examined. Topics discussed include: the effect of lithium on the brain; disagreeable side-effects; the use of the drug with manic-depressive teenagers; its use in other conditions such as drug abuse, neurosis and periodic stupor, schizophrenia, personality disorder, aggressive behavior, organic brain disease and psychiatric disturbances of mood and behavior. It is concluded that lithium helps some adolescents with manic-depressive disorder and probably helps some with periodic psychotic disorders, especially when accompanied by aggressive behavior, when there is a family history of affective illness, and when careful exploration of the occasions when illness occurs leads the clinician to give more weight to endogenous factors than environmental ones. Adolescents given lithium, however, should first be treated with other methods unless they are classically manic-depressive. 66 references.

000993 Stika, L.; Vinar, O. 160 55, Pod Marjankou 83, Prague 6-Brevnov, Czechoslovakia **Who prescribes psychotropic drugs.** Activitas Nervosa Superior. 21(3):159-161, 1979.

An actuarial study of the prescription of psychotropic drugs in several districts of Prague, Czechoslovakia, is described. Significant differences between districts in the proportion of psychotropic drugs prescribed by psychiatrists and other physicians are discussed. In one district, psychiatrists typically dispensed the first prescription for psychotropic drugs, with general practitioners dispensing subsequent prescriptions. In another district, psychiatrists provided most of the maintenance therapy themselves. International comparisons are presented. 10 references.

000994 Valla, J. P. 3647 Peel H3A, IXI Montreal, Quebec, Canada **/Elective alteration of the state of consciousness subjected to the effects of psychoactive substances./** L'alteration elective du psychisme soumis a l'influence de substances psychoactives. Evolution Psychiatrique. 44(4):795-809, 1979.

The production of altered states of consciousness (ASC) and the use of hallucinogenic drugs for purposes of somatic cure are discussed. Studies of hallucinogenic drugs can be classified as therapeutic, psychedelic, and mystic. ASC can be produced experimentally by disorganization of the perceptual field. It is concluded that the problem of ASC calls for a scientific methodological approach in dealing with a subject which provides little room for imagination and preconceived value judgments. (Journal abstract modified)

000995 Valzelli, L. no address **Psychopharmacology of aggression.** Basel, Karger, 1978. 180 p.

Experiments on violent behavior by laboratory animals and antisocial violence by humans are reviewed. Topics include: 1) the effects of sedatives and tranquilizers on predatory behavior in several species, on isolation-induced attack by domestic mice, and on pain-induced behavior in domestic rats; 2) the actions of benzodiazepines, including the effects of testosterone synthesis; 3) experiments involving the administration of antidepressants to laboratory rodents; 4) findings on lithium treatment of both animals and people; 5) the effects of stimulants such as amphetamine on rats and mice in various states; 6) the responses of rodents to cannabis and similar substances; 7) the actions of LSD and other psychodysleptics; 8) clinical and experimental research on narcotic analgesics; 9) the pharmacological management of human violence; and 10) studies of human pathological aggressiveness.

000996 van Praag, H. M. Universiteitskliniek voor Psychiatrie, Rijksuniversiteit Utrecht, Postbus 16250, Utrecht, the Netherlands **/Monoamines and depression: an interim report. I. Serotonin and serotonin-precursors./** Monoaminen en depressie: een tussentijdse balans. I. Serotonine en serotonine precursors. Tijdschrift voor Psychiatrie. 22(4):238-253, 1980.

The possible significance of disorders of the central 5-hydroxytrytamine (5-HT) metabolism in the pathogenesis of recurrent vital depressions is reviewed. Data warrant a tentative conclusion that such metabolic disorders are involved in a certain subcategory of vital depressions and play a role in their pathogenesis. The use of 5-HT precursors in depressions is regarded as a potential asset; however, the assumption that real substitution therapy can thus be given is premature. 53 references. (Journal abstract)

000997 Wagemaker, Herbert; Lippmann, Steven B. Unviersity of Louisville School of Medicine, Louisville, KY **The selection of lithium responders.** Psychiatric Annals. 10(11):41, 45-46, 1980.

The value of giving a lithium trial to patients with chronic mental illness is examined. It is argued that lithium responders may have less personality deterioration than nonresponders. If this is true, then some chronic psychiatric patients have a chance for a normal life. It is suggested that chronic patients be routinely tried on lithium after they are out of the acute phase of their illness. Once the patient is stabilized, lithium should be the only drug used for 3 to 4 months; this will test its effectiveness. After this time, if the patient still shows the affect, thinking, behavior, or personality deterioration of the chronic schizophrenic, neuroleptics may be indicated. It is noted that the effectiveness of lithium and the decision about long-term lithium use are different for each patient. 18 references.

000998 Weissman, Myrna M.; Myers, Jerome K. Dept. of Psychiatry, Yale University School of Medicine, Depression Research Unit, 904 Howard Ave., Suite 2A, New Haven, CT 06510 **Depression in the elderly: research directions in psychopathology, epidemiology, and treatment.** Journal of Geriatric Psychiatry. 12(2):187-201, 1979.

Advances in the psychopathology, epidemiology, and treatment of depression are reviewed and the underrepresentation of the elderly in these studies is discussed. Depression as a symptom and a clinical syndrome is first defined, followed by discussion of the cross-national differences, and reliability and validity of diagnosis. Progress in the areas of epidemiology has resulted in increased effectiveness of pharmacotherapy and the use of tricyclic antidpressants to reduce the acute and chronic depressive syndrome. The elderly, however, have until recently been routinely excluded from these studies for ethical and scientific reasons. 19 references.

000999 Williamson, J. University Dept. of Geriatric Medicine, City Hospital, Greenbank Drive, Edinburgh, EH10 5SB, Scotland **Paving the way to safe prescribing for the elderly.** Geriatrics. 35(9):32-39, 1980.

Problems in prescribing drugs for elderly patients are examined, and it is suggested that if the physician follows certain guidelines, the patients can benefit greatly from a broad spectrum of substances. Problems are often due to the vulnerability of the elderly to adverse drug reactions because of age related changes in drug action, such as absorption, excretion, and metabolism. Hypnotics are grossly overprescribed and a superior approach is advocated and includes a review of lifestyle to identify the changed pattern of sleep. Antidepressants such as the tricyclics have undesirable side-effects, and psychiatric consultation is frequently necessary to treat depression in old age. Tranquillizers are useful for anxiety reactions or psychomotor agitation/restlessness, but the underlying factors should be identified and the use of psychotherapy should be considered. Other drug regimens posing specific problems include hypotensive therapy and antiparkinsonian drugs. 13 references.

001000 Yassa, Ramzy; Ananth, Jambur; Mendis, Tilak. Douglas Hospital Centre, 6875 La Salle Blvd., Montreal, Canada H4H 1R3 **Lithium salts in leukopenic disorders.** New York State Journal of Medicine. 80(7):1076-1079, 1980.

The therapeutic efficacy of lithium in the disease related as well as drug-induced leukopenic conditions is reviewed and its importance discussed. Lithium treatment of disease related neutropenia including Felty's syndrome, neutropenia in acute myeloid leukemia and aplastic anemia, congential neutropenia, and idiopathic granuylocytopenia is reviewed. Treatment of neutropenia induced by cancer chemotherapy and by phenothiazine is discussed. From the lithium treatment of 107 leukopenic patients very few side-effects are reported. Lithium is concluded to be a safe and effective medication for the treatment of drug-induced and medical conditions associated with neutropenia and agranulocytosis. 39 references. (Author abstract modified)

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